US Army Corps
of Engineers

Northwestern Division
Missouri River Basin
Water Management Division

Draft

AOP

2002-2003

Missouri River Mainstem System

2002-2003 Annual Operating Plan

Annual Operating Plan Process
50 Years Serving the Misssouri River Basin

October 2002

DEPARTMENT OF THE ARMY
NORTHWESTERN DIVISION, CORPS OF ENGINEERS
12565 WEST CENTER ROAD
OMAHA, NEBRASKA 68144-3869

REPLY TO
ATTENTION OF:

This Draft Annual Operating Plan (AOP) presents pertinent information regarding water management in the Missouri River Mainstem Reservoir System (System) for the remainder of 2002 through December 2003. The information provided in this AOP is based upon water management guidelines designed to meet the operational objectives of the existing Missouri River Master Water Control Manual. These guidelines are applied to computer simulations of System operation assuming five statistically derived inflow scenarios based on an analysis of water supply records from 1898 to 1997. This approach provides a good range of water management simulations for dry, average, and wet conditions, and eliminates the need to forecast future precipitation, which is very difficult. The AOP information provides a framework for the development of detailed monthly, weekly, and daily regulation schedules for the System's six individual dams during the upcoming year to serve its Congressionally authorized project purposes. System water management is provided by my staff at the Missouri River Basin Water Management Division, Northwestern Division, U.S. Army Corps of Engineers located in Omaha, Nebraska.

Two separate documents will also be available by the end of the calendar year entitled: "System Description and Operation" and "Summary of Actual 2001-2002 Operations." To receive copies of those documents you can contact the Missouri River Basin Water Management Division at 12565 West Center Road, Omaha, Nebraska 68144-3869, phone (402) 697-2676. Both reports are also available at the "Reports and Publications" link on our web site at: **www.nwd.usace.army.mil/rcc**.

Public meetings to discuss this Draft AOP will be held at Bismarck, North Dakota on October 15, 2002, at Omaha, Nebraska on October 16, 2002, and at Jefferson City, Missouri on October 17, 2002. The primary purpose of these meetings is to present a synopsis of the Draft AOP and to allow those in attendance to make comments in person to Corps of Engineers staff. Comments can also be provided in writing to the Missouri River Basin Water Management Division at 12565 West Center Road, Omaha, Nebraska 68144-3869. We ask that any comments be provided by November 15, 2002. The Final AOP is scheduled for publication in early January 2003. Copies of the written comments and a report on the comments received at the three public meetings will be available upon request at that time.

I thank you for your interest in the operation of the Missouri River Mainstem Reservoir System. With your help, I trust we can ensure that the System is operated for all Congressionally authorized project purposes, and meets the contemporary needs of the people who benefit from it.

David A. Fastabend
Brigadier General, Corps of Engineers
Division Engineer

MISSOURI RIVER MAINSTEM RESERVOIR SYSTEM

Annual Operating Plan
2002-2003

TABLES

PLATES

ABBREVIATIONS

AOP	-	annual operating plan
ac.ft.	-	acre-feet
AF	-	acre-feet
B	-	Billion
cfs	-	cubic feet per second
COE	-	Corps of Engineers
CY	-	calendar year (January 1 to December 31)
elev	-	elevation
ft	-	feet
FY	-	fiscal year (October 1 to September 30)
GIS	-	Geographic Information System
GWh	-	gigawatt hour
KAF	-	1,000 acre-feet
Kcfs	-	1,000 cubic feet per second
kW	-	kilowatt
kWh	-	kilowatt hour
M	-	million
MAF	-	million acre-feet
MRBA	-	Missouri River Basin Association
MRNRC	-	Missouri River Natural Resources Committee
msl	-	mean sea level
MW	-	megawatt
MWh	-	megawatt hour
plover	-	piping plover
pp	-	powerplant
RCC	-	Reservoir Control Center
RM	-	river mile
tern	-	interior least tern
tw	-	tailwater
USGS	-	United States Geological Survey
yr	-	year

DEFINITION OF TERMS

Acre-foot (AF, ac-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,850 gallons.

Cubic foot per second (cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute. The volume of water represented by a flow of 1 cubic foot per second for 24 hours is equivalent to 86,400 cubic feet, approximately 1.983 acre-feet, or 646,272 gallons.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by drainage system, which consists of a surface stream or body of impounded surface water together with all tributary surface streams and bodies of impounded water.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Runoff in inches shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

MISSOURI RIVER MAINSTEM RESERVOIR SYSTEM

Annual Operating Plan
2002 - 2003

I. FOREWORD

This Annual Operating Plan (AOP) presents pertinent information and tentative plans for operating the Missouri River Mainstem Reservoir System (System) for the remainder of 2002 through December 2003 under widely varying water supply conditions. It provides a framework for the development of detailed monthly, weekly, and daily regulation schedules for the System's six individual dams during the upcoming year to serve the Congressionally authorized project purposes. Regulation is directed by the Missouri River Basin Water Management Division (formerly the Reservoir Control Center), Northwestern Division, U.S. Army Corps of Engineers (Corps). A map of the Missouri River Basin (Basin) is shown on ***Plate 1*** and the summary of engineering data for the six System reservoirs is shown on ***Plate 2***.

This plan may require adjustments when; substantial departures from expected runoff occur, to meet emergencies, or to meet the provisions of other applicable law, including the Endangered Species Act (ESA) and the conclusion of ongoing Corps and U.S. Fish and Wildlife Service (Service) consultation under Section 7 of that Act. Results of a 5-year extension to the AOP studies (March 2004 to March 2009) will be presented in the Final AOP to serve as a guide for Western Area Power Administration's power marketing activities and those other interests that require information on reservoir conditions for long term planning.

This AOP includes only the plan for future operation. Previous AOPs have included a System description and discussion of the typical operation to meet authorized purposes and a historic summary of the previous year's operation. Although not included in this AOP, they are available as separate reports upon request. To receive a copy of either the updated version of the "System Description and Operation," dated Spring 2002, or the "Summary of Actual 2001-2002 Operations," contact the Missouri River Basin Water Management Division at 12565 West Center Road, Omaha, Nebraska 68144-3869, phone (402) 697-2676. Both reports will be available at the "Reports and Publications" link on our web site at: **www.nwd-mr.usace.army.mil/rcc** in early 2003. As the cover reflects, this year represents the 50th year that an AOP has been prepared for the operation of the System. This process has served the Corps and the Basin well as a forum for discussion of the next year's operating plan.

II. PURPOSE AND SCOPE

Beginning in 1953, projected System operation for the year ahead was developed annually as a basis for advance coordination with the various interested Federal, state, and local agencies and private citizens. Also beginning in 1953, a coordinating committee was organized to make recommendations on each upcoming year's System operation. The Coordinating Committee on Missouri River Mainstem Reservoir Operations held meetings semiannually until 1981 and provided recommendations to the Corps. In 1982, the Committee was dissolved because it did not conform to the provisions of the Federal Advisory Committee Act. Since 1982, to continue providing a forum for public participation, one or more open public meetings are held semiannually in the spring and fall. The fall public meeting is conducted to take public input on a draft of the AOP, which typically is published in early October each year. The spring meetings are conducted to update the public on the current hydrologic conditions and projected System operation for the remainder of the year.

The spring public meetings were held in Pierre, South Dakota on April 9, 2002, Omaha, Nebraska on April 10, 2002 and Kansas City, Missouri on April 11, 2002. The attendees were given an update regarding the outlook for 2002 runoff and projected operation for the remainder of 2002. Three fall public meetings on the Draft AOP will be held on October 15, 2002 at Bismarck, North Dakota, October 16, 2002 at Omaha, Nebraska and October 17, 2002 at Jefferson City, Missouri.

Preliminary draft AOP data was presented to the Missouri River Natural Resources Committee (MRNRC) on August 15, 2002. The MRNRC chose not to provide pre-draft comments.

III. MASTER MANUAL REVIEW AND UPDATE AND ESA CONSULTATIONS

In August 2001 the U.S. Army Corps of Engineers released the Revised Draft Missouri River Environmental Impact Statement (RDEIS) on the Missouri River Master Water Control Manual Review and Update. This RDEIS analyzed a range of alternatives which included changes in water releases from Gavins Point Dam recommended in a reasonable and prudent alternative (RPA) by the Service in a November 2000 Biological Opinion in which they concluded that the Corps' current operation of the Mainstem Reservoir System jeopardizes the continued existence of three protected species – the endangered interior least tern, the threatened piping plover, and the endangered pallid sturgeon. The Corps' preferred alternative and the Final EIS have not been released pending further consultations between the Corps and the Service. This EIS process with a Record of Decision (ROD) may not be completed by the time the Annual Operating Plan for 2002-2003 is finalized. As indicated below, the draft 2002-2003 AOP is based upon the guidelines in the current Missouri River Master Water Control Manual. However, this draft AOP including the Gavins Point flow releases are subject to further ongoing consultations with the Service and the Corps determination of compliance with the ESA.

IV. FUTURE WATER SUPPLY - AUGUST 2002 - DECEMBER 2003

Water supply (runoff) into the six System reservoirs is typically low and relatively stable during the August-to-February period. The August 1 most likely runoff scenario is used as input to the Basic reservoir regulation simulation (Simulation) in the AOP studies for the period August 2002 to February 2003. Two other runoff scenarios based on the August 1 most likely runoff scenario were developed for the same period. These are the 80 percent and 120 percent of the most likely runoff scenarios, which are input to the 80 percent and 120 percent of Basic Simulations for the August 2002 to February 2003 period.

Simulations for the March 1, 2003 to February 29, 2004 time period use five statistically derived inflow scenarios based on an analysis of water supply records from 1898 to 1997. This approach provides a good range of simulations for dry, average, and wet conditions, and eliminates the need to forecast future precipitation, which is very difficult.

The Upper Decile and Upper Quartile Simulations extend from the end of the 120 percent of Basic Simulation through February 2004. Likewise, the Median Simulation extends from the end of the Basic Simulation, and the Lower Quartile and Lower Decile Simulations extend from the end of the 80 percent of Basic Simulation through February 2004.

Upper Decile runoff (34.5 million acre-feet (MAF)) has a 1 in 10 chance of being exceeded, Upper Quartile (30.6 MAF) has a 1 in 4 chance of being exceeded, and Median (24.6 MAF) has a 1 in 2 chance of being exceeded. Lower Quartile runoff (19.5 MAF) has a 1 in 4 chance of the occurrence of less runoff, and Lower Decile (15.5 MAF) has a 1 in 10 chance of the occurrence of less runoff. There is still a 20 percent chance that a runoff condition may occur that has not been simulated; i.e., 10 percent chance runoff could be lower than Lower Decile, and a 10 percent chance runoff could be greater than Upper Decile.

The estimated natural flow 1/ at Sioux City, the corresponding post-1949 water use effects, and the net flow 2/ available above Sioux City are shown in ***Table I,*** where several water supply conditions are quantified for the periods August through February 2003 and the runoff year March 2003 through February 2004. The natural water supply for CY 2002 (actual January 2002 through July 2002 runoff plus the August 1 most likely runoff scenario for the August 2002 through December 2002 period) is estimated to total approximately 17.0 MAF.

TABLE I
NATURAL AND GROSS WATER SUPPLY AT SIOUX CITY

	Natural 1/	Post-1949 Depletions	Net 2/
		(Volumes in 1,000 Acre-Feet)	
August through February 2003 (Most Likely Runoff Scenario)			
Basic	6,600	+200	6,800
120% Basic	8,000	+300	8,300
80% Basic	5,300	+200	5,500
Runoff Year March 2003 through February 2004 (Statistical Analysis of Past Records)			
Upper Decile	34,500	-2,500	32,000
Upper Quartile	30,600	-2,400	28,200
Median	24,600	-2,600	22,000
Lower Quartile	19,500	-2,400	17,100
Lower Decile	15,500	-2,200	13,300

1/ The word "Natural" is used to designate flows adjusted to the 1949 level of basin development, except that regulation and evaporation effects of the Fort Peck Reservoir have also been eliminated during its period of operation prior to 1949. 2/ The word "Net" represents the total streamflow after deduction of the post-1949 irrigation, upstream storage, and other use effects.

V. ANNUAL OPERATING PLAN FOR 2002-2003

A. General. The anticipated operation described in this AOP is designed to meet the operational objectives presented in the current Missouri River Master Water Control Manual (Master Manual), which was first published in the 1960's. Consideration has been given to all of the authorized project purposes, and to the needs of threatened and endangered (T&E) species, and relies on a wealth of operational experience. Operational experience available for preparation of the 2002-2003 AOP includes 13 years of operation at Fort Peck Reservoir (1940) by itself plus 49 years of System experience as Fort Randall (1953), Garrison (1955), Gavins Point (1955), Oahe (1962), and Big Bend (1964) have been brought progressively into System operation. This operational experience includes lessons learned during the 6 consecutive years of drought of the late-1980's through 1992 as well as the high runoff period that followed. Runoff during the period 1993 to 1999 was greater than Upper Quartile level during 5 of those 7 years, including the record 49.0 MAF of runoff in 1997. In addition to the long period of actual operational experience, many background operational studies for the completed System are available for reference.

This operational experience has shown that additional water conservation measures, beyond the specific technical criteria published in the current Master Manual, may be required to meet the operational objectives of the current Master Manual, if System water-in-storage (storage) is below 52 MAF on July 1 of any year. These additional conservation measures may be necessary during drought to offset increased release requirements for water supply due to degradation (lowering) of the channel bed, and to serve navigation, while meeting the Corps' obligations, in consultation with the Service, under the ESA. After each runoff year (March 1 through February 28) an analysis is performed to determine how much additional water conservation, if any, is needed to compensate for releases in excess of the specific technical criteria in that runoff year. If additional water conservation measures are called for, they are applied to the next runoff year's operation. Although July 1, 2002 System storage was only 48.8 MAF, no additional System releases were made for any project purpose above the specific technical criteria in the 2001 runoff year. Therefore, no additional conservation measures beyond the specific technical criteria presented in the Master Manual will be implemented in the 2002 runoff year.

Two sets of Simulations for the 2003 runoff year are shown in the final section of this AOP. The first set, studies 4 through 8 assume a "steady-release" from Gavins Point from mid-May through August to prevent T&E bird species from nesting at low elevations and thereby help protect them from inundation. The second set of Simulations, studies 9 through 13, assume a "flow-to-target" regulation that was used during the 2001 and 2002 T&E bird species nesting season. A flow-to-target regulation would typically result in higher System releases as the T&E nesting season progresses. This is due to reduced tributary inflows downstream as the summer heat builds and precipitation wanes. Increasing releases as the nesting season progresses can inundate nests and chicks on low-lying habitat. Because fledge ratio (numbers of chicks reared to flight stage) goals for the Missouri River are being met, the Corps is continuing to consult with the Service to determine whether under the flow-to-target scenario, low-lying T&E species' nests and chicks at risk of inundation from increasing releases would be moved to higher terrain or a captive rearing facility.

System releases during the navigation season for all Simulations are based on a service level determination in accordance with the March 15 and July 1 storage checks presented in the current Master Manual. Average releases necessary to meet full service flow targets during the navigation season are shown in ***Table II***. Under the steady-release Simulation, System release would be set in mid-May to the level expected to be required to meet downstream flow targets through August. This results in releases that exceed the amount necessary to meet downstream flow targets during the early portion of the T&E bird nesting season.

TABLE II
GAVINS POINT RELEASES NEEDED TO MEET
FULL SERVICE FLOW TARGETS
1950 - 1996
(Discharges in 1,000 cfs)

Runoff Scenario	Month Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Average
Median, Upper Quartile, Upper Decile	26.7	28.0	27.9	31.6	33.2	32.6	32.0	31.1	30.4
Lower Quartile, Lower Decile	29.8	31.3	31.2	34.3	34.0	33.5	33.1	31.2	32.3

System releases under the flow-to-target Simulation would be set at only the level necessary to meet downstream flow targets. The flow-to-target regulation would conserve more water in the System, which would keep the lake levels at the upper three System projects at relatively higher levels. A flow-to-target regulation would conserve approximately 200,000 to 800,000 AF as compared to a steady-release regulation.

The specific technical criteria for the September 1 storage check to determine winter release rates were not used in the Simulations. A minimum release of 13,000 cubic feet per second (cfs) was used for all Median and below Simulations for winter 2002-2003 and winter 2003-2004. This will allow downstream winter flows sufficient to allow the operation of downstream powerplants, as provided for in the current Master Manual, and is based on operational experience.

Application of the specific technical criteria for the September 1 storage check would result in winter releases in 2003-2004 for the Upper Decile and Upper Quartile Simulations above the 13,000 cfs level, but System winter releases will be held to 13,000 cfs as a water conservation measure during the current drought, except for the Upper Decile flow-to-target Simulation. The Upper Decile flow-to-target Simulation utilizes a 16,000 cfs winter 2003-2004 release to lower System storage to the base of the annual flood control (57.1 MAF) by March 1, 2004.

The 13,000 cfs winter release will reduce System storage an additional 536,000 AF for both the Basic and 80% Simulations for winter 2002-2003 compared to the application of the specific technical criteria. Because releases in July and August 2002 were lower in accordance with the Service's interpretation of their November 2000 Biological Opinion, than those needed to provide minimum service, 378,000 AF of storage was conserved as compared to regulation under the specific technical criteria. The reduction in storage in the 2002 runoff year, as compared to regulation under the specific technical criteria, is 158,000 AF.

Only the Median, Lower Quartile, and Lower Decile Simulations show System storage below 52 MAF on July 1, 2003. The Simulations for those three runoff scenarios also show that application of the specific technical criteria result in minimum service except for the Median flow-to-target Simulation, which is 400 cfs above minimum service based on the July 1 System storage check. Shortening of the 2003 navigation season is therefore the only available option for additional water conservation. If the Simulations verify, the 2003 navigation season would be shortened by 5 days for Median, Lower Quartile and Lower Decile runoff to compensate for the additional water released during the winter 2002-2003. The Upper Quartile and Upper Decile Simulations project System storage on July 1 above 52 MAF, and therefore would follow the specific technical criteria.

During the late 1980's-early 1990's drought years, a two-day-down, one-day-up peaking cycle was utilized. This regulation provided for lower flows for two out of three days to conserve water in the System while insuring that T&E bird species did not nest on low-lying habitat. We have not included a peaking cycle in any of the Simulations because of concerns voiced by the Service regarding negative impacts to river fish. Intrasystem releases are adjusted to best serve the multiple-purpose functions of the projects with special emphasis placed on regulation for non-listed fisheries starting in early April and for T&E bird species beginning in early May and continuing through August. System releases for all runoff conditions are at less than full service flows due to low System storage.

A reanalysis of the average monthly Gavins Point releases needed to meet service level targets requirements was completed in 1999. The study used the Daily Long Range Study (DLRS) model for the period 1950 to 1996. As part of this study, the relationship between annual runoff upstream of Sioux City and the average Gavins Point release required for the navigation season was analyzed. The study concluded that generally more water was needed downstream to support navigation during years with below normal upper basin runoff than during years with higher upper basin runoff. Therefore, regulation studies since 1999 use two levels of System release requirements: one for Median, Upper Quartile, and Upper Decile runoff scenarios, and another for Lower Quartile and Lower Decile scenarios.

The updated release requirements for full service navigation used in the development of the 2002-2003 AOP are given in ***Table II***. Releases required for minimum service navigation support are 6,000 cfs less than the numbers provided in ***Table II***. A final report detailing the procedures used in this study is available on our web site.

The flow-to-target Upper Decile Simulation reaches the desired 57.1 MAF level on March 1, 2004. This is due to water conservation provided by less than full service releases and the reduced 2003-2004 winter release. The steady-release Upper Decile Simulation results in System storage at 57.0 MAF on March 1, 2004. The Median and above Simulations also include releases that provide a steady to rising lake level in the three large upper reservoirs during the spring fish spawn period. Similar regulation in the past has resulted in a higher fish reproduction success. As previously stated, Gavins Point releases will not be cycled to conserve water under any of the five studied runoff scenarios.

However, it may be necessary to cycle releases for flood control operations during the T&E species nesting season.

Actual System operation from January 1 through July 31, 2002 and the operating plans for each project for the remainder of 2002 with the Basic Simulation and for CY 2003 using the five runoff scenarios described on page 3 are presented on ***Plates 3 through 8***, inclusive. An exception is the omission of Big Bend, since storage at that project is relatively constant and average monthly releases are essentially the same as those at Oahe. These plates also show, on a condensed scale, actual operations during the period 1953 through 2001.

Plate 9 illustrates for Fort Peck, Garrison, Oahe, and Gavins Point Dams the actual reservoir releases (Regulated Flow) as well as the Missouri River flows (Unregulated Flow) that would have resulted if the reservoirs were not in place during the period January 2001 through July 2002. ***Plate 10*** presents past and simulated gross monthly, average power generation, and gross peaking capability for the System.

B. Operating Plans for the Balance of the 2002 Navigation Season. Gavins Point releases were held to a rate of 25,500 cfs from July 1 through August 14 due to T&E bird species nesting below Fort Randall and Gavins Point. This nesting activity resulted in flows of up to 7,000 cfs less than minimum service being provided at Kansas City and downstream on the Missouri River. After T&E bird species nesting activity concluded, releases were increased from 25,500 cfs to 31,000 by August 15 to meet downstream minimum service flow requirements. Releases through the fall season will continue to be adjusted as needed to provide minimum service (6,000 cfs less than full service) flow support to navigation as computed by the July 1 System storage check. System storage was 48.2 MAF on July 1, 2002, substantially less than the 59.0 MAF minimum storage required to provide full service flows. The current storage is also much less than the 50.5 MAF 1 July check for greater than minimum service flows; therefore a significant System storage gain will have to occur before a service level greater than minimum service is provided. A full 8-month navigation season will be provided in 2002.

System storage declined to 49.3 MAF on December 1 at the close of the 2001 navigation season. The winter brought virtually no significant plains snowpack. The mountain snowpack peaked in the reach above Fort Peck at 91 percent of normal on May 11th, which was about 26 days later than normal. The mountain snowpack in the reach between Fort Peck and Garrison peaked at 85 percent of normal on April 22nd. The total runoff for 2002 is expected to be between Lower Decile and Lower Quartile with a great deal of variability in the way the runoff has occurred. January and February were 116 and 85 percent of normal, respectively. March fell to only 41 percent, and April was 60 percent of normal with no plains snowpack to melt. The months of May, June, and July were well below average at 52, 79, and 62 percent of normal, respectively, because of the below normal mountain snowmelt. Runoff for August is 65 percent of normal and September is only 66 percent of normal. The last three months of the year are forecast to have normal runoff; therefore, the calendar year 2002 runoff is expected to be near 17.0 MAF (67 percent of normal). The closing dates for ending the 2002 navigation season will be November 22 at Sioux City, November 24 at Omaha, November 25 at

Nebraska City, November 27 at Kansas City, and December 1 at the mouth of the Missouri River near St. Louis.

Simulations for the August 1 to December 1 period indicate that 2.8 billion kilowatt hours (kWh) of energy will be generated by the System powerplants, 0.9 billion kWh below normal.

Fort Peck releases will continue at 9,000 cfs through mid-September, then reduced to 5,000 cfs for the remainder of the 2002 navigation season for intrasystem regulation. The Basic Simulation indicates the level of Fort Peck Lake is expected to decline 1.4 feet from elevation 2219.8 feet above mean sea level (msl) to 2218.4 feet msl by the end of the navigation season, 15.9 feet lower than the 1967-2001 long term average.

Garrison releases will be maintained at 21,000 cfs through September 13, and then be lowered to about 17,000 cfs for the remainder of the month. October through mid-November releases will average 14,000 cfs, and then increase to 20,000 cfs by the end of November. The level of Lake Sakakawea is expected to decline steadily by 4.1 feet from elevation 1831.1 feet msl to 1827.0 feet msl by the end of the navigation season, 11.2 feet below the long-term average.

Oahe releases will be reduced from 29,000 cfs in August to 11,000 cfs in October to achieve a scheduled Fort Randall drawdown to elevation 1337.5 feet msl by the end of October, 4-weeks earlier than normal. Releases will be adjusted to serve the variable power loads. Lake Oahe will lower steadily by 4.5 feet throughout the period from elevation 1590.8 to elevation 1586.3 feet msl by the close of the navigation season, 15.5 feet lower than the long-term average.

Big Bend releases will generally parallel those from Oahe. Lake Sharpe will fluctuate between 1420.0 and 1421.0 feet msl for weekly cycling during high power load periods. Reservoir fluctuations of a foot are scheduled during the course of most weeks in order to follow peaking power demands. Storage lost during the week is regained during the succeeding weekend period of lower power demands.

Fort Randall releases will generally parallel those from Gavins Point. Lake Francis Case will fall steadily during the September-through-October period from the 1355.2 feet msl end-of-August elevation to 1337.5 feet msl. The drawdown will be one month earlier than normal to permit the permanent protection of a Native American gravesite located at White Swan. Project personnel requested a further lowering to elevation 1335.0 feet msl by November 11, 2002 with a gradual rise to elevation 1338.0 feet msl by November 18 to permit placement of rock below the normal annual minimum elevation. The lowering of Lake Francis Case will provide sufficient capacity to store a reasonable level of power releases from Oahe and Big Bend during the coming winter season.

Gavins Point releases will be in the range of 25,000 to 31,000 cfs by the end of the navigation season. Prior to 1992, Lewis and Clark Lake was maintained at a target elevation of 1208.0 feet msl from September to mid-February when it was lowered to elevation 1205.0 feet msl, the beginning of the runoff season. The September to mid-February target was lowered to elevation 1207.0 feet msl in

1992 to reduce shoreline erosion and displacement of riprap on the dam. The March-August elevation was raised to elevation 1206.0 feet msl to improve recreational access. After modification of the riprap and coordination with the States of South Dakota and Nebraska, a decision was made to return to the 1208.0 feet msl elevation for the late summer through winter 2001-2002 periods. The State of South Dakota experienced damage to recreation areas last winter and Water Management agreed to lower the target elevation by one-half foot to elevation 1207.5 feet msl from late summer through winter 2002-2003. Lewis and Clark Lake will rise 2.5 feet from elevation 1205.0 to near elevation 1207.5 feet msl during the remainder of the 2002 navigation season that ends December 1.

C. Operating Plan for the Winter of 2002-2003. Due to low System storage, the specific technical criteria presented in the current Master Manual for the September 1 storage check were not used to determine winter 2002-2003 and winter 2003-2004 System releases in the Simulations. At a System storage level of 58.0 MAF or above on September 1, the specific technical criteria calls for a full service release rate for the following winter, and minimum service releases if system storage is at or below 43.0 MAF. Full and minimum service winter release rates are an average Fort Randall release of 15,000 and 5,000 cfs, respectively. The storage on September 1, 2002, given the most likely runoff scenario, would be 46.9 MAF, 11.1 MAF less than the 58.0 MAF required to provide a full service release of 15,000 cfs from Fort Randall Dam. The September 1 storage check specifies a Fort Randall winter release rate of only 7,600 cfs. This corresponds to a Gavins Point winter release of 9,000 cfs, which is much too low based on operational experience with winter ice. Therefore, winter System releases in all Simulations are set to a minimum based on experience (13,000 cfs) for winter 2002-2003 and winter 2003-2004 except for the Upper Decile flow-to-target Simulation. Although the September 1 storage check for the Upper Decile and Upper Quartile Simulations specifies a System release greater than 13,000 cfs, winter releases are not anticipated to exceed 13,000 cfs as a water conservation measure. It may be necessary at times to increase System releases to provide adequate downstream flows if ice jams or blockages form which temporarily restrict flows. These events are expected to occur infrequently and be of short duration based on past experiences. It is anticipated that this year's winter release will be adequate to serve all downstream water intakes except for very short periods that may be impacted below rapidly forming ice jams.

For the winter period from the close of the 2002 navigation season on December 1, 2002 until the opening of the 2003 navigation season on April 1, 2003, operations are expected to be as follows:

Fort Peck releases are expected to average 10,000 cfs in December, 10,500 cfs in January and 10,000 cfs in February. The December release is equal to the 1967-2001 average and the January and February releases are 1,000 cfs and 2,000 cfs below average, respectively. Fort Peck Lake with the Basic Simulation is expected to lower 3.6 feet to elevation 2214.8 feet msl by the end of the winter period. Carryover multiple purpose storage in the three large upper reservoirs will be near a balanced condition on March 1, 2003. The lake is expected to rise 1.2 feet to elevation 2216.0 feet msl by March 31, 16.7 feet below normal.

Garrison releases will be adjusted to serve winter power loads and balance System storage. Releases will follow a more typical pattern than last year's record low 13,000 cfs winter release.

Releases will be scheduled at 20,000 cfs at the time of normal freeze-in in December and likely will have to be reduced for a short period to 18,000 cfs during the freeze-in in the Bismarck area in an attempt to not exceed the target 13-foot stage at the Bismarck gage. Flood stage is 16 feet. Garrison releases are expected to average 19,000 to 20,000 cfs at the beginning of the winter period and gradually increase to 23,000 cfs in January and 24,000 cfs in February, 1,000 to 1,500 cfs less than normal. Lake Sakakawea is expected to lower from near elevation 1827.0 feet msl to elevation 1821.7 feet msl by March 1, 15.8 feet below the base of the annual flood control storage zone. The Median Simulation indicates the lake will rise to elevation 1822.9 by March 31, which would be 12.8 feet below normal.

Oahe releases for the winter season will provide backup for the Fort Randall and Gavins Point releases plus fill the recapture space available at Fort Randall consistent with anticipated winter power loads. Monthly average releases may vary substantially with fluctuations in power loads occasioned by weather conditions but, in general, are expected to average between 15,000 and 16,000 cfs. Daily releases will vary widely to best meet power loads. Peak hourly releases, as well as daily energy generation, will be constrained to prevent urban flooding in the Pierre and Fort Pierre areas if severe ice problems develop downstream of Oahe Dam. This potential reduction has been coordinated with the Western Area Power Administration.

The Lake Oahe level is expected to gradually rise from elevation 1586.3 feet msl at the end of the 2002 navigation season to elevation 1591.2 by March 1, then rise to elevation 1593.8 feet msl by the end of March, 12.8 feet below normal.

Lake Sharpe at Big Bend will be maintained in the normal 1420.0 to 1421.0 feet msl range during the winter.

Fort Randall releases will average 11,000 cfs. Lake Francis Case is expected to rise from a low of about 1337.5 feet msl at the end of the 2002 navigation season to near elevation 1350.0, the seasonal base of flood control, by March 1. However, if the plains snowpack flood potential downstream of Oahe is quite low at that time, measures will be taken to raise Lake Francis Case to near elevation 1353.0 by March 1. It is likely that a Lake Francis Case level above elevation 1353.0 feet msl, to as high as 1355.2, will be reached by the end of the winter period on March 31, if runoff conditions permit. The level of Lake Francis Case above the White River delta near Chamberlain, South Dakota will likely remain at a higher elevation than the lake below the delta from mid October through December, due to the damming effect of this delta area.

Gavins Point releases will be gradually reduced beginning the last week of November to a winter level of about 13,000 cfs. These releases should be adequate to maintain water levels necessary during freeze-in for downstream water intakes; however, adjustments to the releases may be required if significant reduction in flows occurs downstream due to ice blockages. Lewis and Clark Lake will generally be near elevation 1207.5 feet msl until late February when it will be lowered to elevation 1206.0 feet msl for controlling spring floods, primarily from the Niobrara River and Ponca Creek along the Fort Randall to Gavins Point reach.

System storage for all five runoff conditions will be substantially below the base of the annual flood control zone by March 1, 2003, the beginning of next year's runoff season.

D. Operations During the 2003 Navigation Season. The Upper Decile, Upper Quartile, Median, Lower Quartile, and Lower Decile runoff scenarios studied for this year's AOP follow the specific technical criteria presented in the current Master Manual for navigation service flow support. The normal 8-month navigation season length is shortened for Median, Lower Quartile, and Lower Decile as shown in ***Table III*** to compensate for the extra water released during winter 2002-2003. Releases from Fort Peck, Garrison, and Fort Randall will follow repetitive daily patterns from early May, at the beginning of the T&E species nesting season, to the end of the nesting in late August. As previously stated, steady System releases for all five runoff scenarios are shown during the tern and plover nesting season (mid-May to the end of August) to keep birds from nesting at low elevations for the steady-release Simulations. The flow-to-target Simulations follow March 15 and July 1 System storage checks. All runoff scenarios except Lower Quartile and Lower Decile would provide rising pool levels in the spring fish spawn period.

All five runoff scenarios studied for this year's AOP are based on gradually increasing System releases to provide navigation season flow rates at the mouth of the Missouri near St. Louis by April 1, 2003, the normal navigation season opening date. The corresponding dates at upstream locations are: Sioux City, Iowa, March 23; Omaha, Nebraska, March 25; Nebraska City, Nebraska, March 26; and Kansas City, Missouri, March 28. The studies illustrated on ***Plates 3 through 8*** and summarized in ***Table III*** are based on providing less than full service flows, a full 8-month season for Upper Decile and Upper Quartile runoff scenarios, and a shortened season for Median, Lower Quartile, and Lower Decile runoff. Upper Decile releases are 4,800 cfs less than full service in the spring and 1,700 cfs less than full service in the summer and fall for the steady-release Simulations. July 1 System storage in the Upper Decile flow-to- target Simulation specifies 1,200 less than full service in the summer and fall. Releases for Upper Quartile runoff are 4,900 cfs below full service in the spring, increasing to near intermediate service during the summer and fall for the steady-release Simulation. Summer and fall Upper Quartile flow-to-target releases are 400 cfs above intermediate service. Minimum service flows for less than an 8-month navigation season will be provided should Median, Lower Quartile, or Lower Decile runoff occur except Median flow-to-target which is 400 cfs above minimum service based on July 1 System storage.

Navigation flow support for the 2003 season will be determined by actual System storage on March 15 and July 1. Gavins Point releases may be quite variable during the 2003 navigation season but are expected to range from 25,000 to 32,000 cfs. Release reductions necessary to minimize downstream flooding are not reflected in these monthly averages but will be instituted as conditions warrant. The Corps is continuing to consult with the Service on the lower summer flows recommended in their November 2000 Biological Opinion.

Simulated storages and releases for the System and individual reservoirs within the System are shown on ***Plates 3 through 8*** for the steady-release Simulations. Flow-to-target plots are not shown

because the difference cannot be seen at the scale provided except for the Median Gavins Point release shown on ***Plate 4***. Ample regulatory storage space exists in the System to control flood inflows under all conditions studied. ***Table III*** summarizes the navigation service support projected for the 2003 navigation season for the steady-release and flow-to-target Simulations.

TABLE III
NAVIGATION SERVICE SUPPORT
FOR THE 2003 SEASON

STEADY-RELEASE

	Runoff Scenario (MAF)	2003 System Storage March 15 (MAF)	July 1 (MAF)	Flow Level Above or Below Full Service (in cfs) Spring	Summer/Fall	Length of Season (Months)
U.D.	34.5	47.7	56.5	-4,800	-1,700	8
U.Q.	30.6	47.5	54.7	-4,900	-3,100	8
Med	24.6	45.4	50.6	-6,000	-6,000	8 - 5 days
L.Q.	19.5	43.6	46.6	-6,000	-6,000	8 - 5 days
L.D.	15.5	43.5	44.3	-6,000	-6,000	8 - 5 days

FLOW-TO-TARGET

	Runoff Scenario (MAF)	2003 System Storage March 15 (MAF)	July 1 (MAF)	Flow Level Above or Below Full Service (in cfs) Spring	Summer/Fall	Length of Season (Months)
U.D.	34.5	47.7	57.3	-4,800	-1,200	8
U.Q.	30.6	47.5	55.3	-4,900	-2,600	8
Med	24.6	45.4	51.1	-6,000	-5,600	8 - 5 days
L.Q.	19.5	43.6	46.8	-6,000	-6,000	8 - 5 days
L.D.	15.5	43.5	44.6	-6,000	-6,000	8 - 5 days

The two modified reservoir operations shown in the previous two Annual Operating Plans cannot be accomplished in 2003 due to low System storage. When System storage recovers sufficiently, both these operations will be pursued based on recommendations presented to the Corps in the Service's November 2000 Biological Opinion regarding the operation of the System.

The first of these two modified operations are tests of flow modifications for T&E species. When Fort Peck Lake has adequate water above the spillway crest by mid to late May of any year, a T&E flow modification "mini-test" will be conducted in early June to monitor effects of higher spring releases and warmer water released from the spillway. It will also allow for an evaluation of the integrity of the spillway structure given the potential for increased frequency of use. Streambank erosion and fishing impacts will also be monitored.

During the Fort Peck "mini-test," which will last about 4 weeks, flows will vary from 8,000 to 15,000 cfs as various combinations of spillway and powerplant releases are monitored. The maximum spillway release of 11,000 cfs will combine with a minimum powerplant release of 4,000 cfs for 6 days. This operation will be timed to avoid lowering the lake during the forage fish spawn. The "mini-test" will not be conducted if sufficient flows will not pass over the spillway crest (elevation 2225 feet msl). A minimum lake elevation of about 2229 feet msl is needed during the test to avoid unstable flows over the spillway. Results of the Simulations show that this elevation will not be achieved in 2003 for any of the five runoff scenarios. A more extensive test with a combined 20,000 to 30,000 cfs release from Fort Peck is scheduled to be conducted beginning in early June in the year following the "mini-test" to determine if warm water releases will benefit the native river fishery. Peak outflows during the full test would be maintained for 2 weeks within the 4-week test period. Any permanent change to the Fort Peck operation to enhance flows for T&E species will be considered as part of the ongoing Master Manual Review and Update.

The second modified operation involves unbalancing the three large upper reservoirs to benefit reservoir fishery and the T&E species as shown on ***Table IV***. AOP studies indicate the large reservoirs will be balanced on March 1, 2003. Should Upper Decile or Upper Quartile runoff occur in 2003, studies indicate Fort Peck Lake will be 4.0 feet above a balanced condition, Lake Sakakawea will be nearly 3.0 feet below a balanced condition, and Lake Oahe will be balanced on March 1, 2004. Reservoir unbalancing is computed based on the percent of the carryover multiple purpose pool that remains in Fort Peck Lake, Lake Sakakawea, and Lake Oahe. This would permit the Fort Peck T&E flow modification "mini-test" in the spring of 2004, as described in the previous paragraph. Median or lower runoff does not sufficiently refill the reservoirs in 2003 and no unbalancing would occur in spring 2004. The unbalancing would alternate at each project; high one year, float (normal operation) the next year, and low the third year as shown on ***Table IV***. ***Table V*** shows the lake elevations proposed by the MRNRC at which the unbalancing would be terminated. ***Table V*** indicates that no reservoir unbalancing should occur for any of the five runoff scenarios in 2003.

Summary of Reservoir Regulation Activities for T&E Species and Fish Propagation Enhancement

As discussed in the section above, the 2002-2003 AOP includes no provisions for unbalancing the Fort Peck, Garrison, and Oahe reservoirs for any of the runoff scenarios. The criteria for unbalancing are based on recommendations provided by the MRNRC and the Service. Under all Simulations, System storage will be below the minimum levels under which unbalancing is recommended by either the MRNRC or the Service.

Because a Record of Decision (ROD) may not be signed for the Master Manual revision by next spring, the 2002-2003 AOP will follow the guidelines of the Current Water Control Plan (CWCP) presented in the current Master Manual. System regulation under the CWCP in 2003 will most likely provide the flow-related attributes recommended by the Service in their November 2000 Biological Opinion. If the drought continues, minimum service flows will be provided from April 1 through the T&E bird species nesting season. Minimum service flows will likely result in sufficient habitat along the river reaches to meet fledge ratio goals for the T&E bird species recommended in the November 2000 Biological Opinion. Lower than normal pool levels under all runoff scenarios will continue to provide quality nesting habitat for piping plovers along the shoreline of the reservoirs. These low summer flows will continue to be a subject of the ongoing ESA consultation with the Service.

TABLE IV
RESERVOIR UNBALANCING SCHEDULE

	Fort Peck		**Garrison**		**Oahe**	
Year	***March 1***	***Rest of Year***	***March 1***	***Rest of Year***	***March 1***	***Rest of year***
2003	Balance	High	Balance	Low	Balance	Float
2004	High	Float	Low	Hold peak	Raise & hold during spawn	Float
2005	Raise & hold during spawn	Float	High	Float	Low	Hold peak
2006	Low	Hold peak	Raise & hold during spawn	Float	High	Float

Notes:

Unbalancing: 2003 **"**Rest of Year**"** and 2004 unbalancing for Upper Quartile or greater runoff in 2003.

Float year: Normal operation, then unbalance 1 foot during low pool years or 3 feet when System storage is near 57.1 MAF on March 1.

Low year: Begin low, then hold peak the remainder of the year.

High year: Begin high, raise and hold pool during spawn, then float.

TABLE V
MRNRC RECOMMENDED
RESERVOIR ELEVATION GUIDELINES
FOR UNBALANCING

	Fort Peck	**Garrison**	**Oahe**
Implement unbalancing if March 1 reservoir elevation is above this level.	2234 feet msl	1837.5 feet msl	1607.5 feet msl
Implement unbalancing if March 1 reservoir elevation is in this range **and** the pool is expected to raise more than 3 feet after March 1.	2227-2234 feet msl	1827-1837.5 feet msl	1600-1607.5 feet msl
Scheduling Criteria	Avoid lake level decline during spawn period which ranges from April 15 – May 30	Schedule after spawn period of April 20 – May 20	Schedule after spawn period of April 8 – May 15

Under the CWCP the Corps would not implement a spring rise from Gavins Point Dam in 2003. The November 2000 Biological Opinion did not recommend implementation of a spring rise from the System during drought conditions. In addition, the Opinion recommends a spring rise on average once every three years. Implementation of the CWCP for 2003 would not preclude the Corps from meeting this recommendation if the Corps decides to implement a spring rise in future years. Potential implementation of a spring rise from Gavins Point Dam will continue to be a subject of the ongoing ESA consultation with the Service. In addition to water management, other activities are also being undertaken by the Corps to assist in the survival of the endangered species on the Missouri river. Habitat creation for terns, plovers and pallid sturgeon, pallid sturgeon hatchery propagation, and a variety of studies are examples of some of these activities. A complete discussion of these activities can be found in the report entitled "Annual Report for the Missouri River Biological Opinion for 2001" prepared by the Omaha District, U.S. Army Corps of Engineers.

Fort Peck releases during the bird nesting season will range from 8,500 cfs for Upper Decile runoff to 9,500 cfs for Median and below runoff. This regulation should result in habitat conditions for nesting terns and plovers similar to what was available in 2002.

If flood flows enter the Missouri River below the project during the nesting season, hourly releases will be lowered to no less than 3,000 cfs in order to keep traditional riverine fish rearing areas continuously inundated while helping to lower river stages at downstream nesting sites. April releases should be adequate for trout spawning below the project. A rising pool in the April-to-May sport fish spawning season will be dependent upon the ever changing daily inflow pattern to the reservoir but

appears possible with all AOP Simulations. The T&E flow modification "mini-test" will not be run under any runoff scenario. Fort Peck Lake must be at elevation 2229 msl to allow releases through the spillway.

Garrison will have a reduction in flows during the tern and plover nesting season under all runoff scenarios. The reductions will be in the 500- to 1,000-cfs range. Hourly peaking will be limited to no more than 30,000 cfs for 6 hours if the daily average release is lower than 28,000 cfs. This will limit peak stages below the project for nesting birds.

Lake Sakakawea elevations will not reach levels considered necessary for optimum fish spawning during the month of May for any of the runoff scenarios. In addition to the runoff conditions, the actual timing of the rise in lake elevation will be dependent upon the pattern of inflow at that time.

Oahe releases in the spring and summer will back up those from Gavins Point. Oahe's elevation in the spring will be steady or rising given Median or higher runoff. The actual timing of the rise in lake elevation will be dependent upon the pattern of inflow at that time. Under all AOP Simulations, the Oahe pool will fall during the summer.

Fort Randall will be operated to provide for a pool elevation near 1355 during the fish spawn period, provided water can be supplied from other reservoirs for downstream uses, and the lake will not be drawn down below elevation 1337.5 feet msl in the fall to ensure adequate supply for water intakes. Hourly releases from Fort Randall, during the 2003 nesting season will be limited to 37,000 cfs. Daily average flows may be increased every third day to preserve the capability of increasing releases later in the summer if conditions turn dry.

Gavins Point. If the steady-release concept is adopted in 2003, Gavins Point releases will be increased in May for all runoff scenarios when terns and plovers begin to initiate nesting. The release rate will be based on an assessment of flows needed to support the service level targets in August. This will result in steady flows during the nesting season. Based on 2002 nesting season results, it is anticipated that sufficient habitat will be available above the release rates to provide for successful nesting. The resulting steady release prevents inundation of nests and chicks. Cycling releases every third day is not planned during the 2003 nesting season except during downstream flood control operations. If the flow-to-target concept is adopted in 2003, releases will be set to meet the specified navigation service level with increases made as necessary during the T&E bird species nesting season.

The Gavins Point pool will be operated near 1206.0 feet msl in the spring and early summer with variations day to day due to rainfall runoff. Greater fluctuations occur in the river, increasing the risk of nest inundation in the upper end of the Gavins Point pool. Several factors contribute to the increased risk of nest inundation in the upper end of the Gavins Point pool. First, because there are greater numbers of T&E species nesting below the Gavins Point project that must be preserved, Gavins Point releases are restricted during the nesting season. Second, unexpected rainfall runoff between Fort Randall and Gavins Point can result in sudden pool rises because the Gavins Point project has a smaller storage capacity than the other System reservoirs. Third, the operation of Gavins Point for downstream

flood control may necessitate sudden release reductions to prevent downstream bird losses. And finally, high releases required in wet years make nest inundation more likely. When combined, all these factors make it difficult and sometimes impossible to prevent inundation of nests in the upper end of Lewis and Clark Lake. The pool will be increased to elevation 1207.5 feet msl following the nesting season.

VI. SUMMARY OF RESULTS EXPECTED IN 2002-2003

With System operations in accordance with the 2002-2003 AOP outlined in the preceding pages, the following results can be expected.

A. Flood Control. All runoff scenarios studied will begin next year's runoff season on March 1, 2003, substantially below the desired 57.1 MAF base of annual flood control and multiple use zone. Therefore, the entire System flood control zone plus an additional 10.8 to 14.1 MAF of the carryover multiple use zone will be available to store runoff. The System will be available to significantly reduce peak discharges for all floods that may originate above the System.

Remaining storage in the carryover multiple use zone will be adequate to provide support for all of the other multiple purposes of the System, although recreation access may be difficult at some locations for the lower runoff scenarios.

B. Water Supply and Water Quality Control. Although below normal winter releases are being provided for all five runoff scenarios, all water supply and water quality requirements on the Missouri River both below Gavins Point Dam and between System reservoirs should be met for all flow conditions studied. It is possible with the low winter releases that ice formation or ice jams may temporarily reduce river stages to levels below which some intakes can draw water. Therefore, during severe cold spells experience has shown that for brief periods it may be necessary to increase Gavins Point releases to help alleviate water supply problems.

C. Irrigation. Scheduled releases from the System reservoirs will be ample to meet the volumes of flow required for irrigation diversions from the Missouri River. Some access problems may be experienced, however, if drought conditions persist. Tributary irrigation water usage is fully accounted for in the estimates of water supply.

D. Navigation. Service to navigation in 2003 would be scheduled below full service flow support for all five runoff scenarios. Reductions below full service for the steady-release and flow-to-target Simulations are shown in ***Table III***. Although these Simulations provide a comparison of typical flow support under varying runoff conditions that cover 80 percent of the historic runoff conditions, the actual rate of flow support for the 2003 navigation season will be based on actual System storage on March 15 and July 1, 2003.

Upper Decile and Upper Quartile Simulations show an 8-month navigation season. The Median, Lower Quartile and Lower Decile Simulations shorten the season 5 days. The anticipated service level and season length for all runoff conditions simulated are shown in ***Table III***.

E. Power. ***Tables VI*** and ***VII*** give the estimated monthly System load requirements and hydropower supply of the Eastern Division, Pick-Sloan Missouri Basin Program (P-S MBP), from August 2002 through December 2003. Estimates of monthly peak demands and energy include customer requirements for firm, short-term firm, summer firm, peaking, and various other types of power sales, System losses, and the effects of diversity. Also included in the estimated requirements are deliveries of power to the Western Division, P-S MBP, to help meet its firm power commitments.

F. Recreation, Fish and Wildlife. The basic operations of the System will continue to provide recreation and fish and wildlife opportunities in the project areas and along the Missouri River as well as other benefits of a managed system. Special operational adjustments incorporating specific objectives for these purposes will be accomplished whenever possible. Conditions should be favorable for the many visitors who enjoy the camping, boating, fishing, hunting, swimming, picnicking, and other recreational activities associated with the System reservoirs and for increasing usage of the regulated reaches of the Missouri River downstream of the reservoirs.

Boat ramps that were lowered and low water ramps that were constructed during the drought of the late 1980's to early 1990's should be adequate to provide lake access next year even under the Lower Decile runoff scenario. However, boat ramps in a few areas where the ramps could not be extended may become unusable. This will affect the normal use patterns, as visitors will have to seek out areas with usable boat ramps. Boat ramp elevations for Fort Peck, Garrison, Oahe and Fort Randall were added in 2001 to our web site at: www.nwd-mr.usace.army.mil/rcc.

The effects of the simulated System operation during 2002-2003 on fish and wildlife are included in the section entitled, "Summary of Reservoir Regulation Activities for T&E Species and Fish Propagation Enhancement."

TABLE VI

PEAKING CAPABILITY AND SALES (Steady Release Regulation)

(1,000 kW at plant)

	Estimated Committed Sales*	Expected C of E Capability					Expected Bureau Capability**					Expected Total System Capability				
2002		120%	Basic	80%			120%	Basic	80%			120%	Basic	80%		
Aug	2133	2141	2139	2136			190	181	180			2331	2320	2316		
Sep	1475	2136	2131	2124			191	181	178			2327	2312	2302		
Oct	1400	2100	2090	2079			194	183	180			2294	2273	2259		
Nov	1783	2096	2081	2066			194	183	176			2290	2264	2242		
Dec	1965	2074	2057	2039			190	181	170			2264	2238	2209		
2003																
Jan	2214	2096	2076	2058			185	178	167			2281	2254	2225		
Feb	1837	2113	2090	2069			183	177	164			2296	2267	2233		
		U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med	L.Q.	L.D.
Mar	1678	2181	2174	2144	2111	2108	192	192	182	163	163	2373	2366	2326	2274	2271
Apr	1480	2204	2192	2153	2111	2106	195	195	190	164	164	2399	2387	2343	2275	2270
May	1385	2223	2206	2163	2113	2100	201	203	199	174	174	2424	2409	2362	2287	2274
Jun	1660	2259	2238	2194	2139	2109	211	212	207	182	182	2470	2450	2401	2321	2291
Jul	2276	2270	2247	2197	2136	2097	213	213	209	184	180	2483	2460	2406	2320	2277
Aug	2124	2261	2238	2185	2118	2076	209	209	206	182	176	2470	2447	2391	2300	2252
Sep	1475	2258	2234	2179	2108	2063	208	208	206	184	178	2466	2442	2385	2292	2241
Oct	1400	2248	2222	2164	2078	2030	207	207	208	187	180	2455	2429	2372	2265	2210
Nov	1769	2216	2189	2132	2050	2002	206	206	204	187	179	2422	2395	2336	2237	2181
Dec	1960	2204	2175	2108	2031	1973	200	200	198	185	177	2404	2375	2306	2216	2150

* Estimated sales, including system reserves. Power in addition to hydro production needed for these load requirements wil be obtained from other power systems by interchange or purchase.

** Total output of Canyon Ferry and 1/2 of the output of Yellowtail powerplant.

TABLE VI

PEAKING CAPABILITY AND SALES (Flow to Target Regulation)

(1,000 kW at plant)

	Estimated Committed Sales*	Expected C of E Capability					Expected Bureau Capability**					Expected Total System Capability				
2002		120%	Basic	80%			120%	Basic	80%			120%	Basic	80%		
Aug	2133	2141	2139	2136			190	181	180			2331	2320	2316		
Sep	1475	2136	2131	2124			191	181	178			2327	2312	2302		
Oct	1400	2100	2090	2079			194	183	180			2294	2273	2259		
Nov	1783	2096	2081	2066			194	183	176			2290	2264	2242		
Dec	1965	2074	2057	2039			190	181	170			2264	2238	2209		
2003																
Jan	2214	2096	2076	2058			185	178	167			2281	2254	2225		
Feb	1837	2113	2090	2069			183	177	164			2296	2267	2233		
		U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med	L.Q.	L.D.
Mar	1678	2181	2174	2144	2111	2108	192	192	182	163	163	2373	2366	2326	2274	2271
Apr	1480	2204	2192	2153	2111	2106	195	195	190	164	164	2399	2387	2343	2275	2270
May	1385	2228	2210	2166	2114	2106	201	203	199	174	174	2429	2413	2365	2288	2280
Jun	1660	2272	2248	2202	2144	2102	211	212	207	182	182	2483	2460	2409	2326	2284
Jul	2276	2284	2257	2206	2140	2114	213	213	209	184	180	2497	2470	2415	2324	2294
Aug	2124	2275	2248	2193	2122	2102	209	209	206	182	176	2484	2457	2399	2304	2278
Sep	1475	2271	2243	2187	2112	2079	208	208	206	184	178	2479	2451	2393	2296	2257
Oct	1400	2261	2230	2172	2081	2066	207	207	208	187	180	2468	2437	2380	2268	2246
Nov	1769	2228	2196	2138	2053	2034	206	206	204	187	179	2434	2402	2342	2240	2213
Dec	1960	2212	2183	2114	2035	2005	200	200	198	185	177	2412	2383	2312	2220	2182

* Estimated sales, including system reserves. Power in addition to hydro production needed for these load requirements wil be obtained from other power systems by interchange or purchase.

** Total output of Canyon Ferry and 1/2 of the output of Yellowtail powerplant.

TABLE VII
ENERGY GENERATION AND SALES (Steady Release Regulation)
(Million kWh at plant)

2002	Estimated Committed Sales*	Expected C of E Generation					Expected Bureau Generation **					Expected Total System Generation				
			120%	Basic	80%			120%	Basic	80%			120%	Basic	80%	
Aug	829		867	872	877			50	44	38			917	916	915	
Sep	714		763	767	769			48	47	36			811	814	805	
Oct	722		494	520	508			54	47	35			548	567	543	
Nov	774		590	596	576			57	46	40			647	642	616	
Dec	910		547	552	550			59	48	41			606	600	591	
2003																
Jan	896		608	581	578			58	48	37			666	629	615	
Feb	850		548	528	521			51	43	32			599	571	553	
		U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med	L.Q.	L.D.
Mar	785	475	500	492	531	538	68	70	48	38	38	543	570	540	569	576
Apr	737	528	549	559	632	624	77	77	44	36	36	605	626	603	668	660
May	685	713	725	690	762	754	108	102	47	40	40	821	827	737	802	794
Jun	745	829	820	759	790	770	118	122	53	54	54	947	942	812	844	824
Jul	829	913	901	844	867	843	143	131	77	52	51	1056	1032	921	919	894
Aug	835	925	912	837	858	832	99	93	73	51	50	1024	1005	910	909	882
Sep	713	805	770	703	688	685	95	88	70	49	48	900	858	773	737	733
Oct	720	675	626	555	569	571	93	89	69	49	48	768	715	624	618	619
Nov	774	594	566	480	502	496	89	85	79	52	45	683	651	559	554	541
Dec	884	600	598	570	585	544	91	91	80	53	46	691	689	650	638	590
CY TOT	9453	8213	8123	7598	7883	7756	1090	1057	731	543	525	9303	9180	8329	8426	8281

* Estimated sales including system reserves and losses. Power in addition to hydro production needed for these load requirements will be obtained from other systems by interchange or purchase.
** Total output Canyon Ferry and 1/2 output of Yellowtail powerplant.

TABLE VII
ENERGY GENERATION AND SALES (Flow to Target Regulation)
(Million kWh at plant)

2002	Estimated Committed Sales*	Expected C of E Generation					Expected Bureau Generation **					Expected Total System Generation				
			120%	Basic	80%			120%	Basic	80%			120%	Basic	80%	
Aug	829		867	872	877			50	44	38			917	916	915	
Sep	714		763	767	769			48	47	36			811	814	805	
Oct	722		494	520	508			54	47	35			548	567	543	
Nov	774		590	596	576			57	46	40			647	642	616	
Dec	910		547	552	550			59	48	41			606	600	591	
2003																
Jan	896		608	581	578			58	48	37			666	629	615	
Feb	850		548	528	521			51	43	32			599	571	553	
		U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med.	L.Q.	L.D.	U.D.	U.Q.	Med	L.Q.	L.D.
Mar	785	475	500	492	531	538	68	70	48	38	38	543	570	540	569	576
Apr	737	528	544	559	632	624	77	77	44	36	36	605	621	603	668	660
May	685	623	632	625	729	716	108	102	47	40	40	731	734	672	769	756
Jun	745	655	657	641	729	706	118	122	53	54	54	773	779	694	783	760
Jul	829	898	870	814	872	843	143	131	77	52	51	1041	1001	891	924	894
Aug	835	940	912	840	855	824	99	93	73	51	50	1039	1005	913	906	874
Sep	713	818	780	711	683	687	95	88	70	49	48	913	868	781	732	735
Oct	720	686	636	562	566	572	93	89	69	49	48	779	725	631	615	620
Nov	774	611	577	486	501	497	89	85	79	52	45	700	662	565	553	542
Dec	884	664	598	572	586	545	91	91	80	53	46	755	689	652	639	591
CY TOT	9453	8054	7862	7411	7783	7651	1090	1057	731	543	525	9144	8919	8142	8326	8176

* Estimated sales including system reserves and losses. Power in addition to hydro production needed for these load requirements will be obtained from other systems by interchange or purchase.
** Total output Canyon Ferry and 1/2 output of Yellowtail powerplant.

G. System Storage. If presently anticipated runoff estimates based upon normal precipitation materialize, System storage will total about 44.3 MAF by the close of CY 2002. This year-end storage would be 4.6 MAF less than the 48.9 MAF experienced on December 31, 2001, and 11.0 MAF less than the 1967 to 2001 average. Since the System first filled to normal operating levels in 1967, the lowest end-of-December storage was 40.9 MAF in 1990. The previous lowest storage prior to the 1988-1992 drought was 50.9 MAF in 1981. The end-of-year storages have ranged from a maximum of 60.9 MAF, which occurred in 1975, to the 1990 minimum of 40.9 MAF. Total System storage on December 31, 2003 is presented in ***Table VIII***.

H. Summary of Water Use by Functions. Anticipated water use in CY 2002, under the Basic Simulation, is shown in ***Tables IX and X***. Actual water use data for CY 2001 are included for information and comparison.

Under the simulated operations, estimated water use in CY 2003, which will be subject to reappraisal next year, also is shown in ***Table IX*** for the steady-release Simulations and in ***Table X*** for the flow-to-target Simulations. Note that project releases are lower for the flow-to-target Simulation since no additional releases are made for T&E bird species.

VII. TENTATIVE PROJECTION OF OPERATIONS THROUGH MARCH 2009

(Not Completed Until Final Plan is Adopted)

TABLE VIII
ANTICIPATED DECEMBER 31, 2003 STORAGE IN SYSTEM

STEADY-RELEASE SIMULATIONS

Water Supply Condition	Total (12/31/03)	Above Minimum Pools 1/	Unfilled Carryover Storage 2/	Total Change CY 2003
		(Volumes in 1,000 Acre-Feet)		
Upper Decile	56,200	38,100	900	10,600
Upper Quartile	53,700	35,600	3,400	8,000
Median	48,000	29,900	9,100	3,700
Lower Quartile	41,900	23,800	15,200	-1,300
Lower Decile	38,600	20,500	18,500	-4,500

FLOW-TO-TARGET SIMULATIONS

Water Supply Condition	Total (12/31/03)	Above Minimum Pools 1/	Unfilled Carryover Storage 2/	Total Change CY 2003
		(Volumes in 1,000 Acre-Feet)		
Upper Decile	56,700	38,600	400	11,000
Upper Quartile	54,300	36,200	2,800	8,600
Median	48,500	30,400	8,600	4,100
Lower Quartile	42,100	24,000	15,000	-1,100
Lower Decile	38,900	20,800	18,200	-4,300

1/ Net usable storage above 18.1 million-acre-foot System minimum pool level established for power, recreation, irrigation diversions, and other purposes.

2/ System base of flood control zone containing 57.1 million acre-feet.

TABLE IX
MISSOURI RIVER MAINSTEM SYSTEM
WATER USE FOR CALENDAR YEARS 2001, 2002, AND 2003 ABOVE SIOUX CITY, IOWA
in Million Acre-Feet (MAF)

				Steady-Release Simulations for Calendar Year 2003				
		CY 2001 Actual	CY 2002 Basic Simulation	Upper Decile	Upper Quartile	Median	Lower Quartile	Lower Decile
Upstream Depletions	(1)							
Irrigation, Tributary Reservoir Evaporation & Other Uses		2.0	2.0					
Tributary Reservoir Storage Change		- 0.1	- 0.4					
Total Upstream Depletions		1.9	1.6	2.7	2.7	2.8	2.4	2.1
System Reservoir Evaporation	(2)	2.7	2.1	1.2	1.2	1.5	1.7	1.5
Sioux City Flows								
Navigation Season								
Unregulated Flood Inflows Between Gavins Point & Sioux City	(3)	0.0	0.0					
Navigation Service Requirement		14.6	14.7	16.3	14.9	12.4	12.8	12.8
Supplementary Releases								
T&E Species	(4)	0.0	-0.4	0.5	0.5	0.5	0.2	0.2
Flood Evacuation	(5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nonnavigation Season								
Flows		3.8	3.5	3.4	3.3	3.6	3.5	3.4
Flood Evacuation Releases	(6)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
System Storage Change		- 0.5	- 4.5	10.4	8.0	3.8	- 1.1	-4.5
Total		22.5	17.0	34.5	30.6	24.6	19.5	15.5
Project Releases								
Fort Peck		4.3	4.8	5.5	5.6	5.8	5.7	5.7
Garrison		9.6	11.7	14.8	14.6	13.7	14.1	13.5
Oahe		11.2	14.4	14.1	14.1	13.4	14.9	15.0
Big Bend		10.5	13.9	14.0	14.1	13.3	14.8	14.9
Fort Randall		12.0	14.8	15.2	15.0	14.1	14.9	15.0
Gavins Point		13.9	15.8	17.3	16.7	15.4	16.0	16.0

(1) Tributary uses, above the 1949 level of development including agricultural depletions and tributary storage effects.
(2) Net evaporation is shown for 2003.
(3) Incremental inflows to reach which exceed those usable in support of navigation at the target level, even if Gavins Point releases were held to as low as 6,000 cfs.
(4) Increased releases required to maintain navigation release flexibility during the T&E species nesting season. During 2002, releases fell below minimum service support flows because of T&E nesting resulting in a negative value instead of zero.
(5) Includes flood control releases for flood control storage evacuation and releases used to extend the navigation season beyond the normal December 1 closing date at the mouth of the Missouri River.
(6) Releases for flood control storage evacuation in excess of a 15,000 cfs Fort Randall release.

TABLE X
MISSOURI RIVER MAINSTEM SYSTEM
WATER USE FOR CALENDAR YEARS 2001, 2002, AND 2003 ABOVE SIOUX CITY, IOWA
in Million Acre-Feet (MAF)

				Flow-to-Target Simulations for Calendar Year 2003				
		CY 2001 Actual	CY 2002 Basic Simulation	Upper Decile	Upper Quartile	Median	Lower Quartile	Lower Decile
Upstream Depletions	(1)							
Irrigation, Tributary Reservoir Evaporation & Other Uses		2.0	2.0					
Tributary Reservoir Storage Change		- 0.1	- 0.4					
Total Upstream Depletions		1.9	1.6	2.7	2.7	2.8	2.4	2.1
System Reservoir Evaporation	(2)	2.7	2.1	1.2	1.2	1.5	1.7	1.5
Sioux City Flows								
Navigation Season								
Unregulated Flood Inflows Between Gavins Point & Sioux City	(3)	0.0	0.0					
Navigation Service Requirement		14.6	14.7	15.8	14.8	12.4	12.8	12.8
Supplementary Releases								
T&E Species	(4)	0.0	-0.4	0.0	0.0	0.0	0.0	0.0
Flood Evacuation	(5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-navigation Season								
Flows		3.8	3.5	3.9	3.4	3.8	3.7	3.4
Flood Evacuation Releases	(6)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
System Storage Change		- 0.5	- 4.5	10.9	8.5	4.1	-1.1	-4.3
Total		22.5	17.0	34.5	30.6	24.6	19.5	15.5
Project Releases								
Fort Peck		4.3	4.8	5.4	5.4	5.7	5.6	5.6
Garrison		9.6	11.7	14.8	14.4	13.5	13.9	13.3
Oahe		11.2	14.4	13.6	13.5	13.0	14.7	14.7
Big Bend		10.5	13.9	13.5	13.5	12.9	14.5	14.6
Fort Randall		12.0	14.8	14.7	14.4	13.6	14.7	14.7
Gavins Point		13.9	15.8	16.8	16.1	14.9	15.8	15.8

(1) Tributary uses, above the 1949 level of development including agricultural depletions and tributary storage effects.
(2) Net evaporation is shown for 2003.
(3) Incremental inflows to reach which exceed those usable in support of navigation at the target level, even if Gavins Point releases were held to as low as 6,000 cfs.
(4) Increased releases required to maintain navigation release flexibility during the T&E species nesting season. During 2002, releases fell below minimum service support flows because of T&E nesting resulting in a negative value instead of zero.
(5) Includes flood control releases for flood control storage evacuation and releases used to extend the navigation season beyond the normal December 1 closing date at the mouth of the Missouri River.
(6) Releases for flood control storage evacuation in excess of a 15,000 cfs Fort Randall release.

MISSOURI RIVER BASIN

PLATE 1

Summary of Engineering Data -- Missouri River Mainstem System

Item No.	Subject	Fort Peck Lake	Garrison Dam - Lake Sakakawea	Oahe Dam - Lake Oahe
1	Location of Dam	Near Glasgow, Montana	Near Garrison, ND	Near Pierre, SD
2	River Mile - 1960 Mileage	Mile 1771.5	Mile 1389.9	Mile 1072.3
3	Total & incremental drainage areas in square miles	57,500	181,400 (2) 123,900	243,490 (1) 62,090
4	Approximate length of full reservoir (in valley miles)	134, ending near Zortman, MT	178, ending near Trenton, ND	231, ending near Bismarck, ND
5	Shoreline in miles (3)	1520 (elevation 2234)	1340 (elevation 1837.5)	2250 (elevation 1607.5)
6	Average total & incremental inflow in cfs	10,200	25,600 15,400	28,900 3,300
7	Max. discharge of record near damsite in cfs	137,000 (June 1953)	348,000 (April 1952)	440,000 (April 1952)
8	Construction started - calendar yr.	1933	1946	1948
9	In operation (4) calendar yr.	1940	1955	1962
	Dam and Embankment			
10	Top of dam, elevation in feet msl	2280.5	1875	1660
11	Length of dam in feet	21,026 (excluding spillway)	11,300 (including spillway)	9,300 (excluding spillway)
12	Damming height in feet (5)	220	180	200
13	Maximum height in feet (5)	250.5	210	245
14	Max. base width, total & w/o berms in feet	3500, 2700	3400, 2050	3500, 1500
15	Abutment formations (under dam & embankment)	Bearpaw shale and glacial fill	Fort Union clay shale	Pierre shale
16	Type of fill	Hydraulic & rolled earth fill	Rolled earth filled	Rolled earth fill & shale berms
17	Fill quantity, cubic yards	125,628,000	66,500,000	55,000,000 & 37,000,000
18	Volume of concrete, cubic yards	1,200,000	1,500,000	1,045,000
19	Date of closure	24 June 1937	15 April 1953	3 August 1958
	Spillway Data			
20	Location	Right bank - remote	Left bank - adjacent	Right bank - remote
21	Crest elevation in feet msl	2225	1825	1596.5
22	Width (including piers) in feet	820 gated	1336 gated	456 gated
23	No., size and type of gates	16 - 40' x 25' vertical lift gates	28 - 40' x 29' Tainter	8 - 50' x 23.5' Tainter
24	Design discharge capacity, cfs	275,000 at elev 2253.3	827,000 at elev 1858.5	304,000 at elev 1644.4
25	Discharge capacity at maximum operating pool in cfs	230,000	660,000	80,000
	Reservoir Data (6)			
26	Max. operating pool elev. & area	2250 msl 246,000 acres	1854 msl 380,000 acres	1620 msl 374,000 acres
27	Max. normal op. pool elev. & area	2246 msl 240,000 acres	1850 msl 364,000 acres	1617 msl 360,000 acres
28	Base flood control elev & area	2234 msl 212,000 acres	1837.5 msl 307,000 acres	1607.5 msl 312,000 acres
29	Min. operating pool elev. & area	2160 msl 90,000 acres	1775 msl 128,000 acres	1540 msl 117,000 acres
	Storage allocation & capacity			
30	Exclusive flood control	2250-2246 975,000 a.f.	1854-1850 1,489,000 a.f.	1620-1617 1,102,000 a.f.
31	Flood control & multiple use	2246-2234 2,717,000 a.f.	1850-1837.5 4,222,000 a.f.	1617-1607.5 3,201,000 a.f.
32	Carryover multiple use	2234-2160 10,785,000 a.f.	1837.5-1775 13,130,000 a.f.	1607.5-1540 13,461,000 a.f.
33	Permanent	2160-2030 4,211,000 a.f.	1775-1673 4,980,000 a.f.	1540-1415 5,373,000 a.f.
34	Gross	2250-2030 18,688,000 a.f.	1854-1673 23,821,000 a.f.	1620-1415 23,137,000 a.f.
35	Reservoir filling initiated	November 1937	December 1953	August 1958
36	Initially reached min. operating pool	27 May 1942	7 August 1955	3 April 1962
37	Estimated annual sediment inflow	18,100 a.f. 1030 yrs.	25,900 a.f. 920 yrs.	19,800 a.f. 1170 yrs.
	Outlet Works Data			
38	Location	Right bank	Right Bank	Right Bank
39	Number and size of conduits	2 - 24' 8" diameter (nos. 3 & 4)	1 - 26' dia. and 2 - 22' dia.	6 - 19.75' dia. upstream, 18.25' dia. downstream
40	Length of conduits in feet (8)	No. 3 - 6,615, No. 4 - 7,240	1529	3496 to 3659
41	No., size, and type of service gates	1 - 28' dia. cylindrical gate 6 ports, 7.6' x 8.5' high (net opening) in each control shaft	1 - 18' x 24.5' Tainter gate per conduit for fine regulation	1 - 13' x 22' per conduit, vertical lift, 4 cable suspension and 2 hydraulic suspension (fine regulation)
42	Entrance invert elevation (msl)	2095	1672	1425
43	Avg. discharge capacity per conduit & total	Elev. 2250 22,500 cfs - 45,000 cfs	Elev. 1854 30,400 cfs - 98,000 cfs	Elev. 1620 18,500 cfs - 111,000 cfs
44	Present tailwater elevation (ft msl)	2032-2036 5,000 - 35,000 cfs	1670-1680 15,000- 60,000 cfs	1423-1428 20,000-55,000 cfs
	Power Facilities and Data			
45	Avg. gross head available in feet (14)	194	161	174
46	Number and size of conduits	No. 1-24'8" dia., No. 2-22'4" dia.	5 - 29' dia., 25' penstocks	7 - 24' dia., imbedded penstocks
47	Length of conduits in feet (8)	No. 1 - 5,653, No. 2 - 6,355	1829	From 3,280 to 4,005
48	Surge tanks	PH#1: 3-40' dia., PH#2: 2-65' dia.	65' dia. - 2 per penstock	70' dia., 2 per penstock
49	No., type and speed of turbines	5 Francis, PH#1-2: 128.5 rpm, 1-164 rpm , PH#2-2: 128.6 rpm	5 Francis, 90 rpm	7 Francis, 100 rpm
50	Discharge cap. at rated head in cfs	PH#1, units 1&3 170', 2-140' 8,800 cfs, PH#2-4&5 170'-7,200 cfs	150' 41,000 cfs	185' 54,000 cfs
51	Generator nameplate rating in kW	1&3: 43,500; 2: 18,250; 4&5: 40,000	3 - 109,250, 2 - 95,000	112,290
52	Plant capacity in kW	185,250	517,750	786,030
53	Dependable capacity in kW (9)	181,000	388,000	534,000
54	Avg. annual energy, million kWh (12)	1,142	2,429	2,867
55	Initial generation, first and last unit	July 1943 - June 1961	January 1956 - October 1960	April 1962 - June 1963
56	Estimated cost September 1999 completed project (13)	$158,428,000	$305,274,000	$346,521,000

Summary of Engineering Data -- Missouri River Mainstem System

Big Bend Dam - Lake Sharpe	Fort Randall Dam - Lake Francis Case	Gavins Point Dam - Lewis & Clark Lake	Total	Item No.	Remarks
21 miles upstream Chamberlain, SD	Near Lake Andes, SD	Near Yankton, SD		1	(1) Includes 4,280 square miles of non-contributing areas.
Mile 987.4	Mile 880.0	Mile 811.1		2	
249,330 (1) 5,840	263,480 (1) 14,150	279,480 (1) 16,000		3	
80, ending near Pierre, SD	107, ending at Big Bend Dam	25, ending near Niobrara, NE	755 miles	4	(2) Includes 1,350 square miles of non-contributing areas.
200 (elevation 1420)	540 (elevation 1350)	90 (elevation 1204.5)	5,940 miles	5	(3) With pool at base of flood control.
28,900	30,000 1,100	32,000 2,000		6	
440,000 (April 1952)	447,000 (April 1952)	480,000 (April 1952)		7	(4) Storage first available for regulation of flows.
1959	1946	1952		8	(5) Damming height is height from low water to maximum operating pool. Maximum height is from average streambed to top of dam.
1964	1953	1955		9	
1440	1395	1234		10	
10,570 (including spillway)	10,700 (including spillway)	8,700 (including spillway)	71,596	11	(6) Based on latest available storage data.
78	140	45	863 feet	12	
95	165	74		13	(7) River regulation is attained by flows over low-crested spillway and through turbines.
1200, 700	4300, 1250	850, 450		14	
Pierre shale & Niobrara chalk	Niobrara chalk	Niobrara chalk & Carlile shale		15	(8) Length from upstream face of outlet or to spiral case.
Rolled earth, shale, chalk fill	Rolled earth fill & chalk berms	Rolled earth & chalk fill		16	
17,000,000	28,000,000 & 22,000,000	7,000,000	358,128,000 cu. yds	17	(9) Based on 8th year (1961) of drought drawdown (From study 8-83-1985).
540,000	961,000	308,000	5,554,000 cu. yds.	18	
24 July 1963	20 July 1952	31 July 1955		19	
Left bank - adjacent	Left bank - adjacent	Right bank - adjacent		20	(10) Affected by level of Lake Francis case. Applicable to pool at elevation 1350.
1385	1346	1180		21	
376 gated	1000 gated	664 gated		22	(11) Spillway crest.
8 - 40' x 38' Tainter	21 - 40' x 29' Tainter	14 - 40' x 30' Tainter		23	(12) 1967-2001 Average
390,000 at elev 1433.6	620,000 at elev 1379.3	584,000 at elev 1221.4		24	(13) Source: Annual Report on Civil Works Activities of the Corps of Engineers. Extract Report Fiscal Year 1999.
270,000	508,000	345,000		25	
1423 msl 61,000 acres	1375 msl 102,000 acres	1210 msl 31,000 acres	1,194,000 acres	26	(14) Based on Study 8-83-1985
1422 msl 60,000 acres	1365 msl 95,000 acres	1208 msl 28,000 acres	1,147,000 acres	27	
1420 msl 57,000 acres	1350 msl 77,000 acres	1204.5 msl 24,000 acres	989,000 acres	28	
1415 msl 51,000 acres	1320 msl 38,000 acres	1204.5 msl 24,000 acres	450,000 acres	29	
1423-1422 60,000 a.f.	1375-1365 985,000 a.f.	1210-1208 59,000 a.f.	4,670,000 a.f.	30	
1422-1420 117,000 a.f.	1365-1350 1,309,000 a.f.	1208-1204.5 90,000 a.f.	11,656,000 a.f.	31	
	1350-1320 1,607,000 a.f.		38,983,000 a.f.	32	
1420-1345 1,682,000 a.f.	1320-1240 1,517,000 a.f.	1204.5-1160 321,000 a.f.	18,084,000 a.f.	33	
1423-1345 1,859,000 a.f.	1375-1240 5,418,000 a.f.	1210-1160 470,000 a.f.	73,393,000 a.f.	34	
November 1963	January 1953	August 1955		35	
25 March 1964	24 November 1953	22 December 1955		36	
4,300 a.f. 430 yrs.	18,300 a.f. 250 yrs.	2,600 a.f. 180 yrs.	92,500 a.f.	37	
	Left Bank			38	
None (7)	4 - 22' diameter	None (7)		39	
	1013			40	
	2 - 11' x 23' per conduit, vertical lift, cable suspension			41	
1385 (11)	1229	1180 (11)		42	
	Elev 1375			43	
	32,000 cfs - 128,000 cfs				
1351-1355(10) 25,000-100,000 cfs	1228-1239 5,000-60,000 cfs	1155-1163 15,000-60,000 cfs		44	
70	117	48	764 feet	45	
None: direct intake	8 - 28' dia., 22' penstocks	None: direct intake		46	
	1,074		55,083	47	
None	59' dia, 2 per alternate penstock	None		48	
8 Fixed blade, 81.8 rpm	8 Francis, 85.7 rpm	3 Kaplan, 75 rpm	36 units	49	
67' 103,000 cfs	112' 44,500 cfs	48' 36,000 cfs		50	
3 - 67,276, 5 - 58,500	40,000	44,100		51	
494,320	320,000	132,300	2,435,650 kw	52	
497,000	293,000	74,000	1,967,000 kw	53	Corps of Engineers, U.S. Army
1,041	1,843	754	10,077 million kWh	54	Compiled by
October 1964 - July 1966	March 1954 - January 1956	September 1956 - January 1957	July 1943 - July 1966	55	Northwestern Division
				56	Missouri River Region
$107,498,000	$199,066,000	$49,617,000	$1,166,404,000		May 2001

Summary of Engineering Data -- Missouri River Main Stem System

Big Bend Dam - Lake Sharpe	Fort Randall Dam - Lake Francis Case	Gavins Point Dam - Lewis & Clark Lake	Total	Item No.	Remarks
21 miles upstream Chamberlain, SD	Near Lake Andes, SD	Near Yankton, SD		1	(1) Includes 4,280 square miles of non-contributing areas.
Mile 987.4	Mile 880.0	Mile 811.1		2	
249,330 (1) 5,840	263,480 (1) 14,150	279,480 (1) 16,000		3	
80, ending near Pierre, SD	107, ending at Big Bend Dam	25, ending near Niobrara, NE	755 miles	4	(2) Includes 1,350 square miles of non-contributing areas.
200 (elevation 1420)	540 (elevation 1350)	90 (elevation 1204.5)	5,940 miles	5	(3) With pool at base of flood control.
28,900	30,000 1,100	32,000 2,000		6	
440,000 (April 1952)	447,000 (April 1952)	480,000 (April 1952)		7	(4) Storage first available for regulation of flows.
1959	1946	1952		8	(5) Damming height is height from low water to maximum operating pool. Maximum height is from average streambed to top of dam.
1964	1953	1955		9	
1440	1395	1234		10	
10,570 (including spillway)	10,700 (including spillway)	8,700 (including spillway)	71,596	11	(6) Based on latest available storage data.
78	140	45	863 feet	12	
95	165	74		13	(7) River regulation is attained by flows over low-crested spillway and through turbines.
1200, 700	4300, 1250	850, 450		14	
Pierre shale & Niobrara chalk	Niobrara chalk	Niobrara chalk & Carlile shale		15	(8) Length from upstream face of outlet or to spiral case.
Rolled earth, shale, chalk fill	Rolled earth fill & chalk berms	Rolled earth & chalk fill		16	
17,000,000	28,000,000 & 22,000,000	7,000,000	358,128,000 cu. yds	17	(9) Based on 8th year (1961) of drought drawdown (From study 8-83-1985).
540,000	961,000	308,000	5,554,000 cu. yds.	18	
24 July 1963	20 July 1952	31 July 1955		19	
Left bank - adjacent	Left bank - adjacent	Right bank - adjacent		20	(10) Affected by level of Lake Francis case. Applicable to pool at elevation 1350.
1385	1346	1180		21	
376 gated	1000 gated	664 gated		22	(11) Spillway crest.
8 - 40' x 38' Tainter	21 - 40' x 29' Tainter	14 - 40' x 30' Tainter		23	(12) 1967-2001 Average
390,000 at elev 1433.6	620,000 at elev 1379.3	584,000 at elev 1221.4		24	(13) Source: Annual Report on Civil Works Activities of the Corps of Engineers. Extract Report Fiscal Year 1999.
270,000	508,000	345,000		25	
1423 msl 61,000 acres	1375 msl 102,000 acres	1210 msl 31,000 acres	1,194,000 acres	26	(14) Based on Study 8-83-1985
1422 msl 60,000 acres	1365 msl 95,000 acres	1208 msl 28,000 acres	1,147,000 acres	27	
1420 msl 57,000 acres	1350 msl 77,000 acres	1204.5 msl 24,000 acres	989,000 acres	28	
1415 msl 51,000 acres	1320 msl 38,000 acres	1204.5 msl 24,000 acres	450,000 acres	29	
1423-1422 60,000 a.f.	1375-1365 985,000 a.f.	1210-1208 59,000 a.f.	4,670,000 a.f.	30	
1422-1420 117,000 a.f.	1365-1350 1,309,000 a.f.	1208-1204.5 90,000 a.f.	11,656,000 a.f.	31	
	1350-1320 1,607,000 a.f.		38,983,000 a.f.	32	
1420-1345 1,682,000 a.f.	1320-1240 1,517,000 a.f.	1204.5-1160 321,000 a.f.	18,084,000 a.f.	33	
1423-1345 1,859,000 a.f.	1375-1240 5,418,000 a.f.	1210-1160 470,000 a.f.	73,393,000 a.f.	34	
November 1963	January 1953	August 1955		35	
25 March 1964	24 November 1953	22 December 1955		36	
4,300 a.f. 430 yrs.	18,300 a.f. 250 yrs.	2,600 a.f. 180 yrs.	92,500 a.f.	37	
	Left Bank			38	
None (7)	4 - 22' diameter	None (7)		39	
	1013			40	
	2 - 11' x 23' per conduit, vertical lift, cable suspension			41	
1385 (11)	1229	1180 (11)		42	
	Elev 1375			43	
	32,000 cfs - 128,000 cfs				
1351-1355(10) 25,000-100,000 cfs	1228-1239 5,000-60,000 cfs	1155-1163 15,000-60,000 cfs		44	
70	117	48	764 feet	45	
None: direct intake	8 - 28' dia., 22' penstocks	None: direct intake		46	
	1,074		55,083	47	
None	59' dia, 2 per alternate penstock	None		48	
8 Fixed blade, 81.8 rpm	8 Francis, 85.7 rpm	3 Kaplan, 75 rpm	36 units	49	
67' 103,000 cfs	112' 44,500 cfs	48' 36,000 cfs		50	
3 - 67,276, 5 - 58,500	40,000	44,100		51	
494,320	320,000	132,300	2,435,650 kw	52	
497,000	293,000	74,000	1,967,000 kw	53	Corps of Engineers, U.S. Army
1,041	1,843	754	10,077 million kWh	54	Compiled by
October 1964 - July 1966	March 1954 - January 1956	September 1956 - January 1957	July 1943 - July 1966	55	Northwestern Division
				56	Missouri River Region
$107,498,000	$199,066,000	$49,617,000	$1,166,404,000		May 2001

System Storage

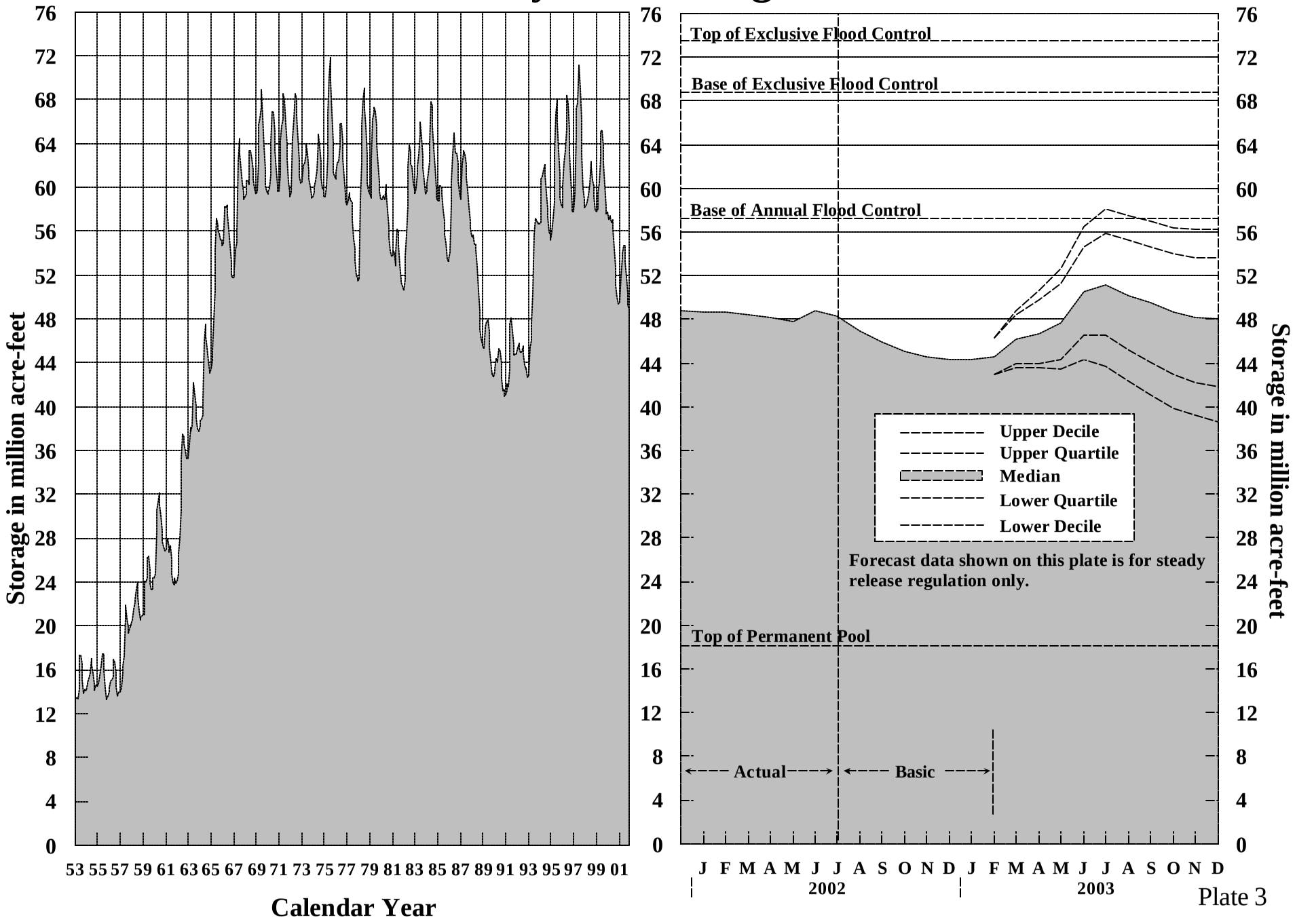


Plate 3

Gavins Point Releases

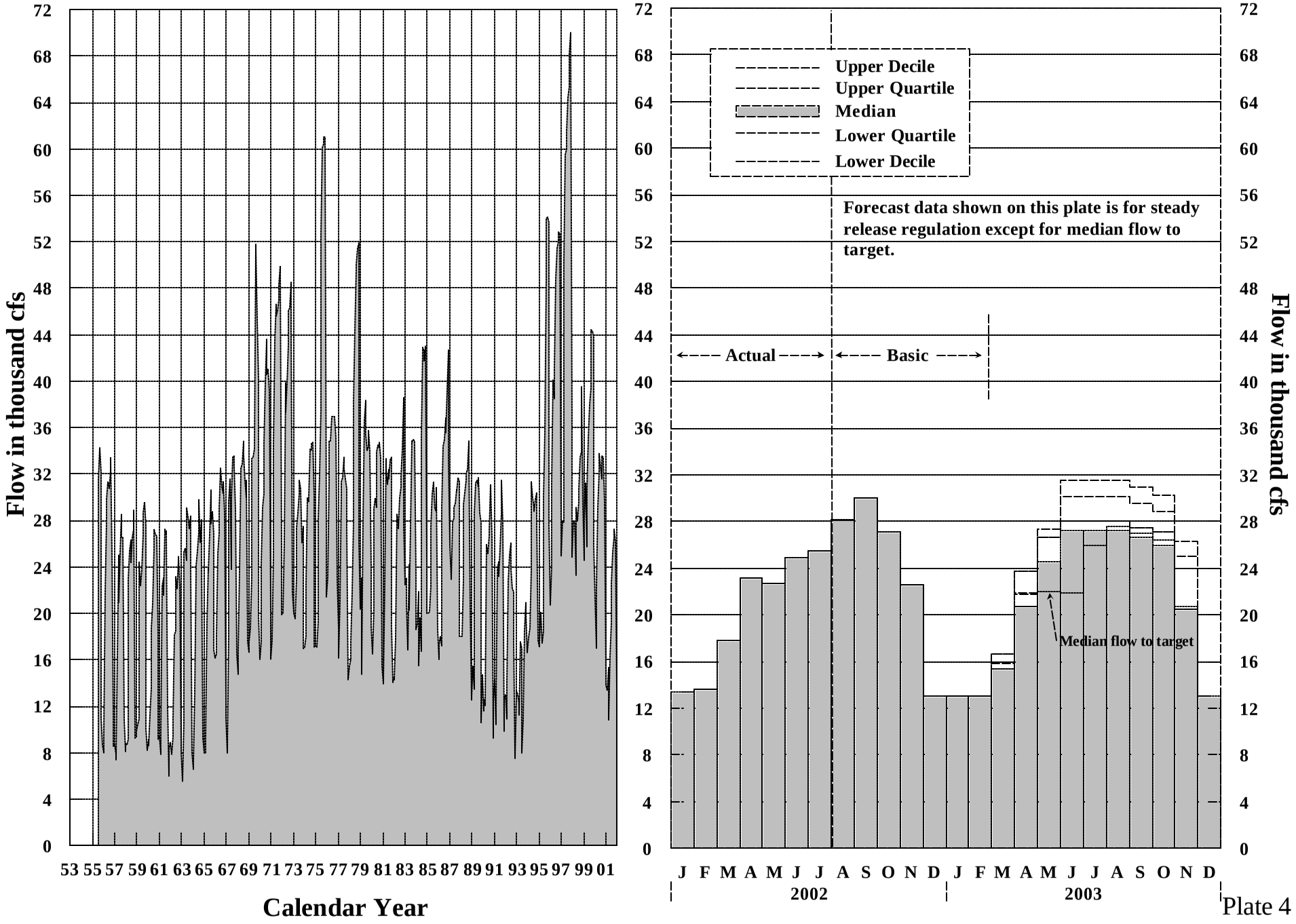
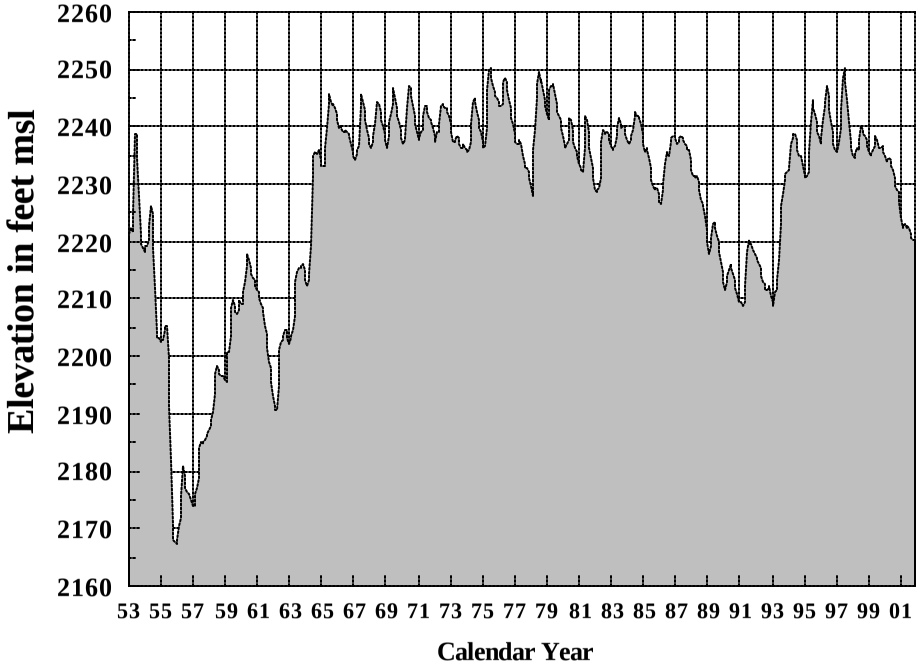
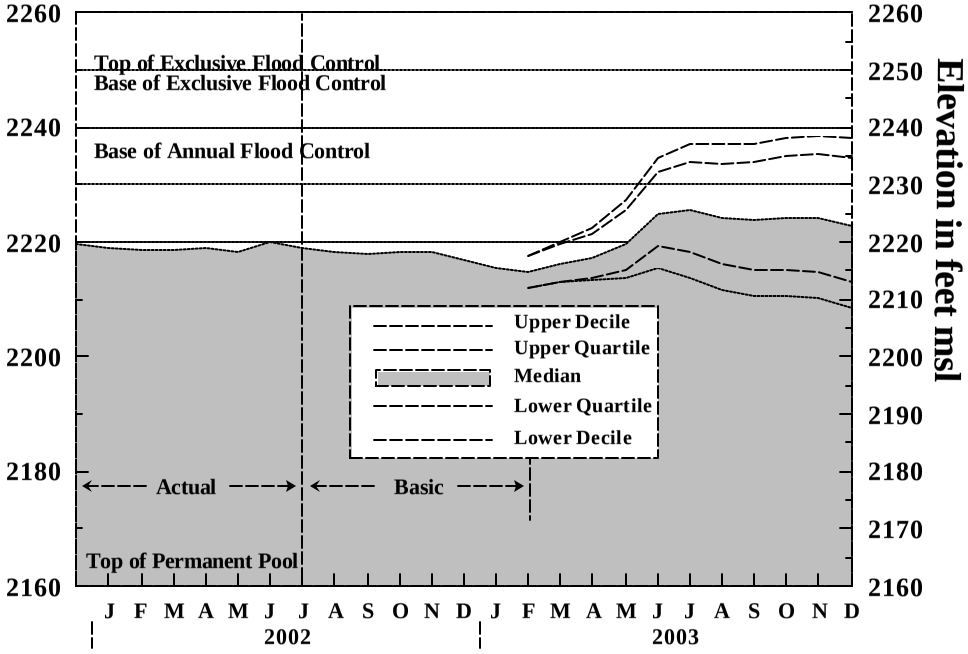
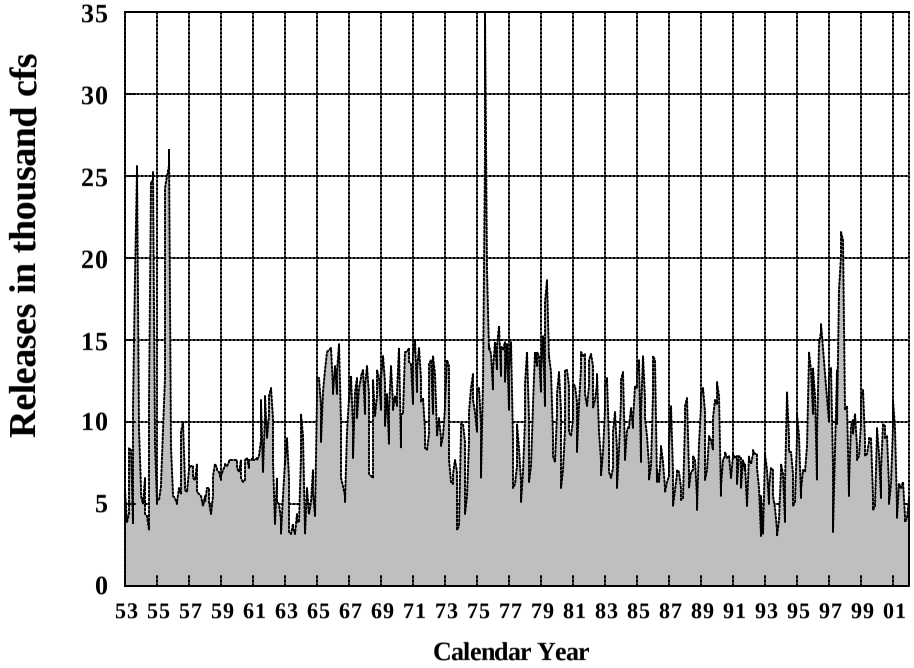


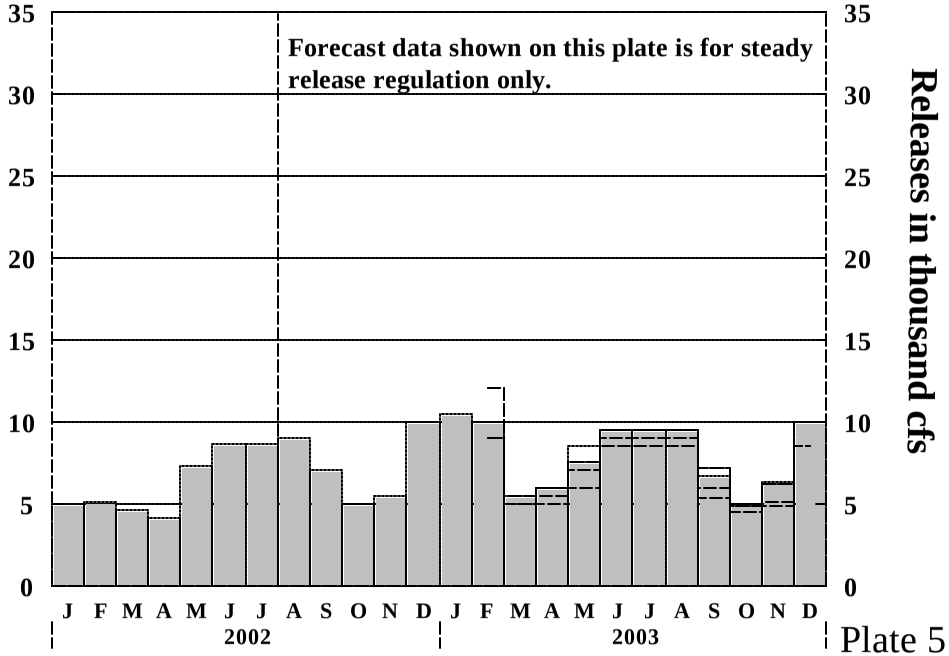
Plate 4

Fort Peck
Elevations and Releases

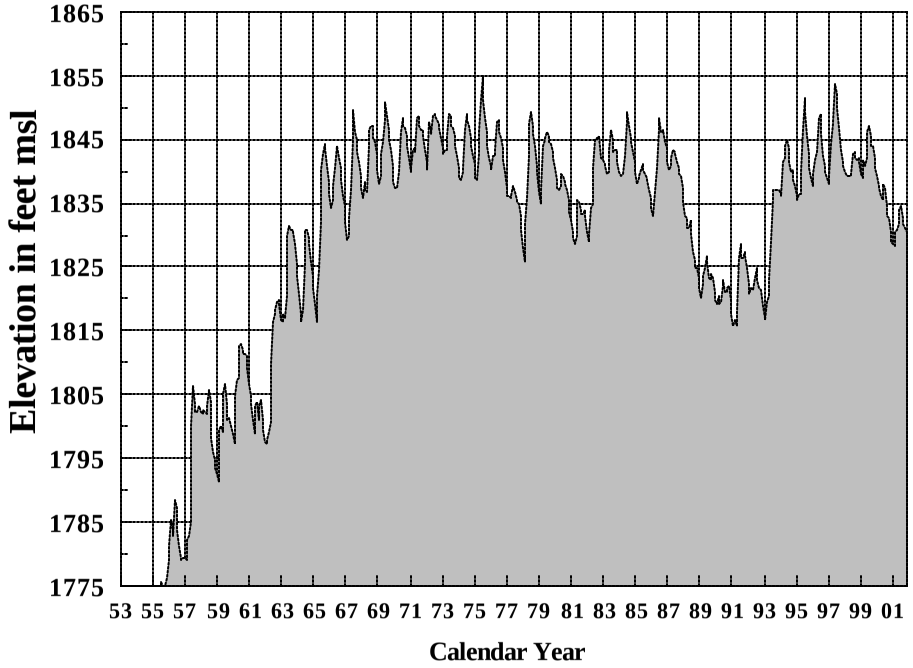


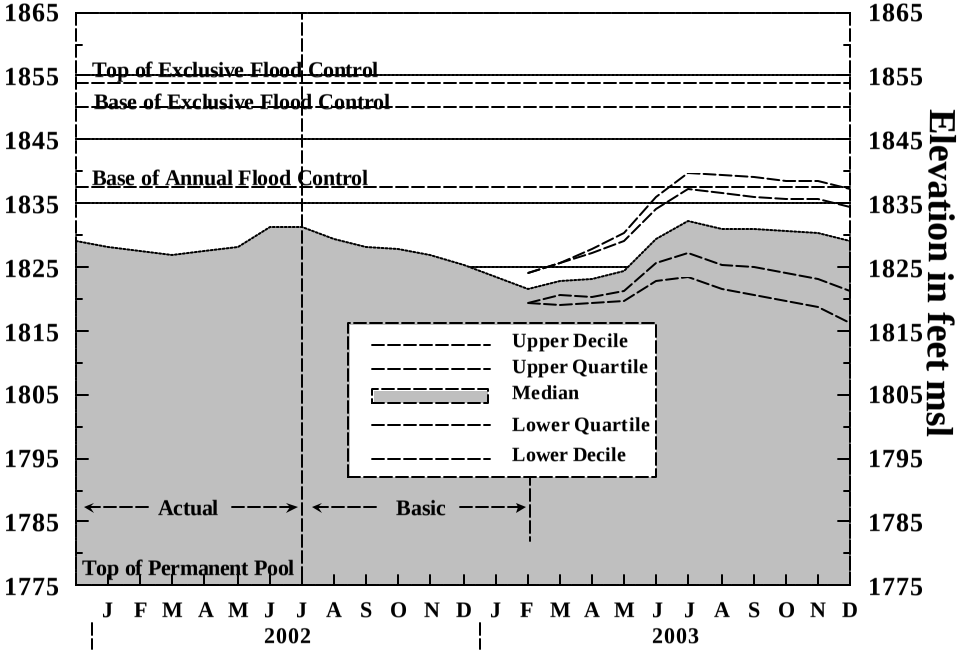


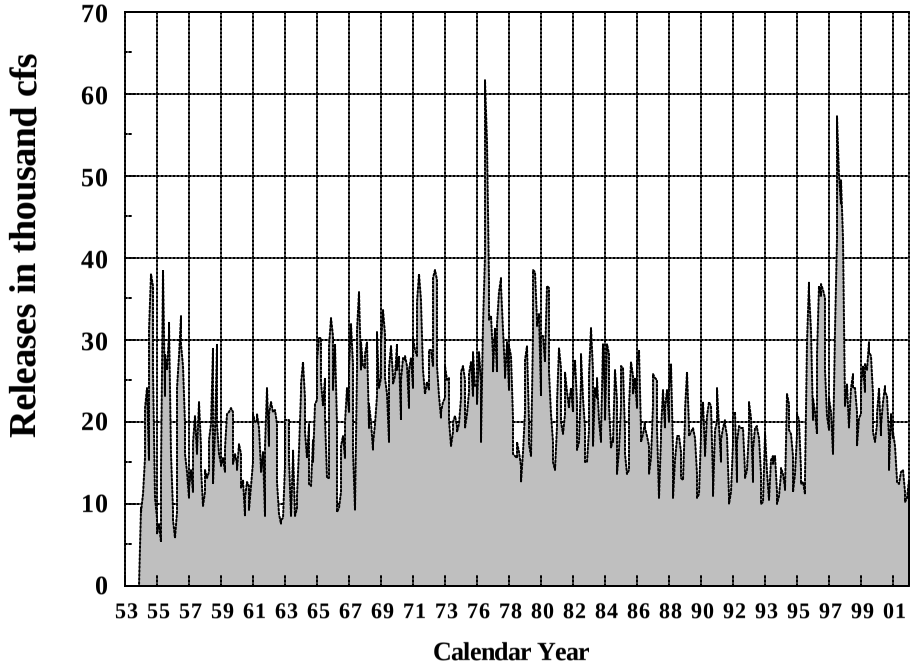




Garrison
Elevations and Releases







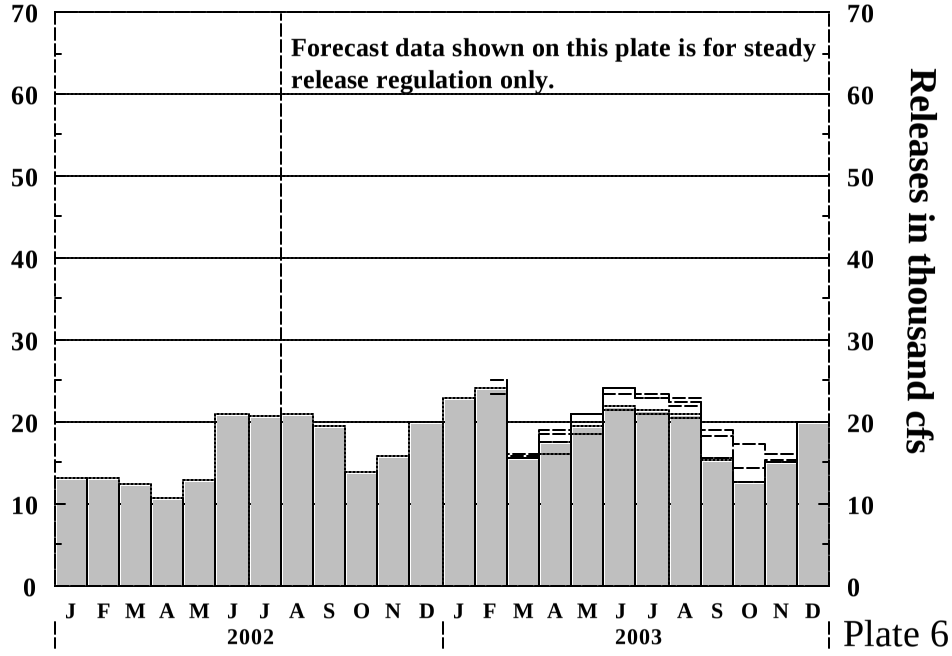
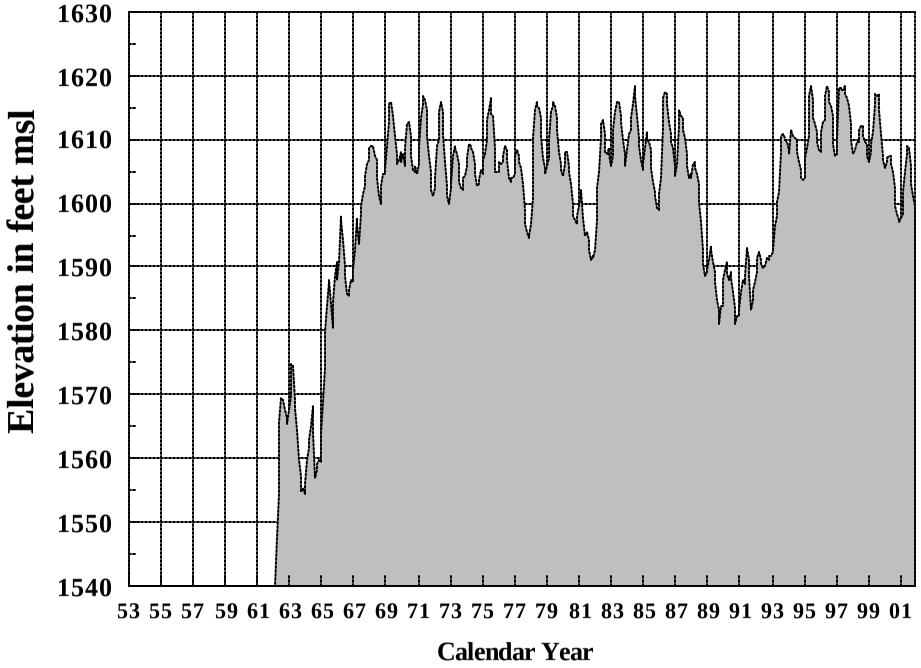
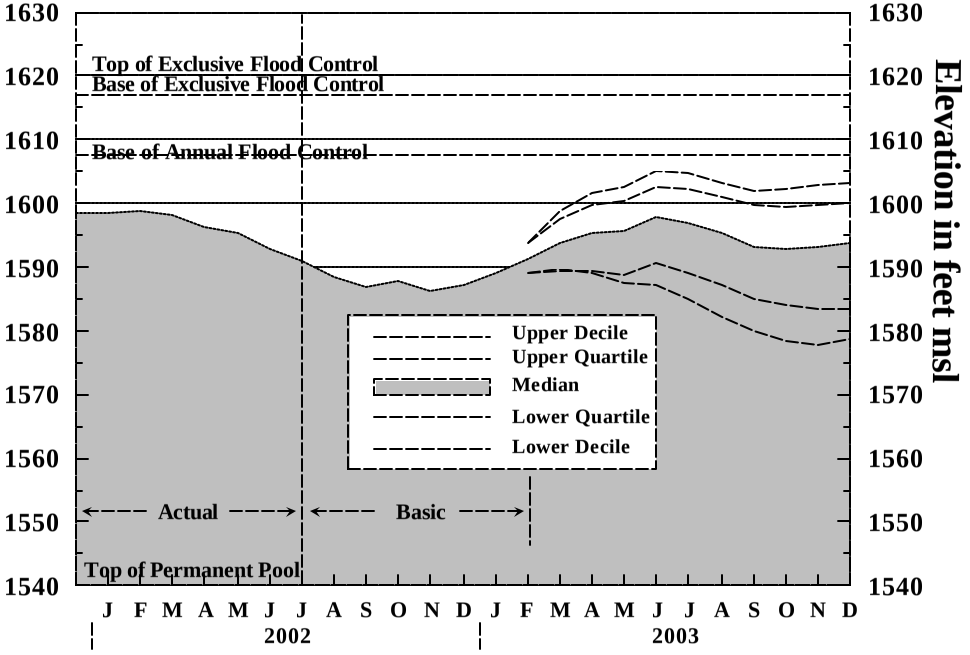


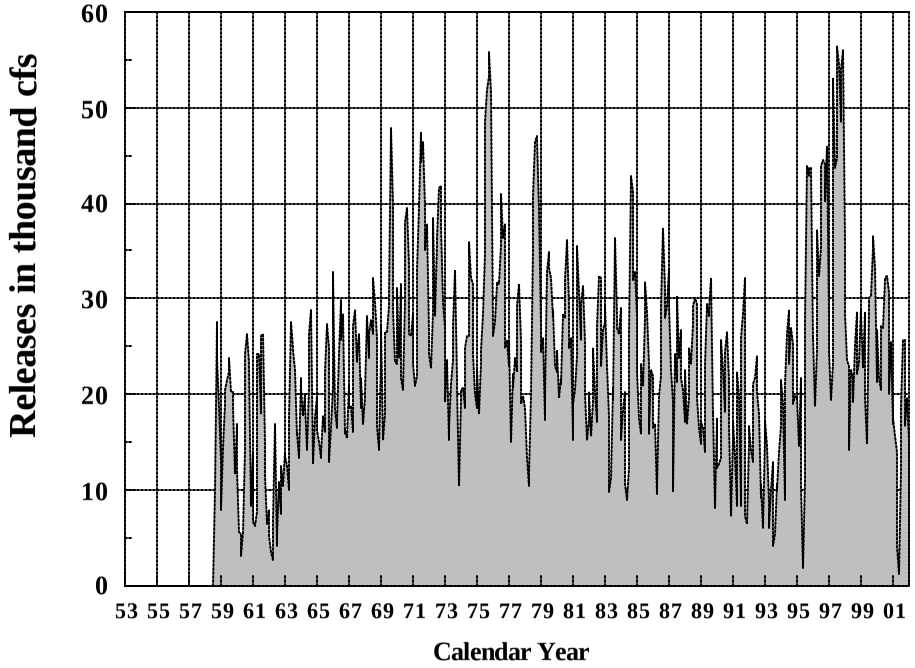
Plate 6

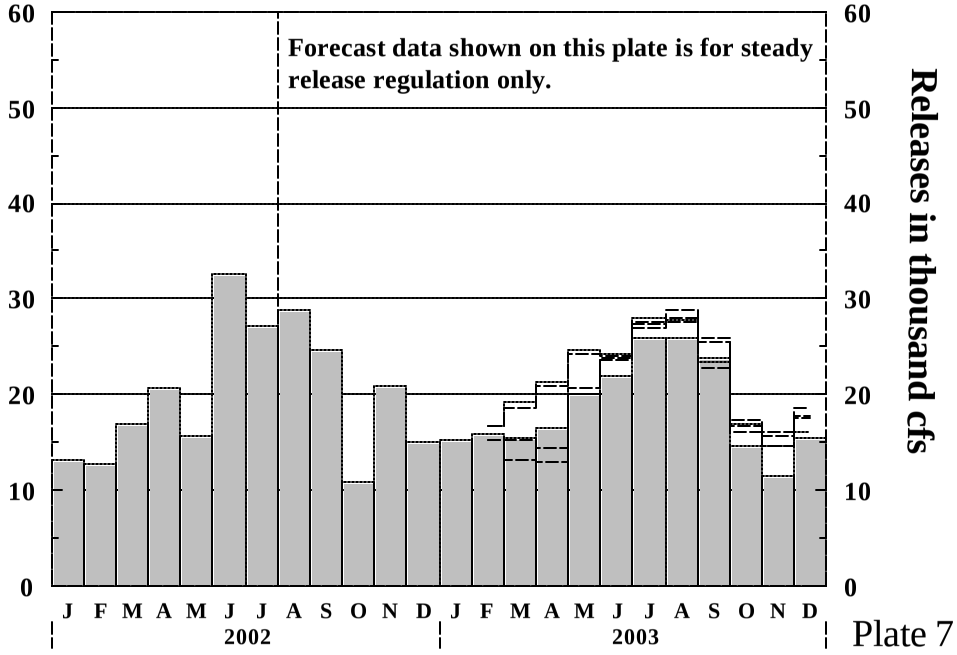
Oahe

Elevations and Releases

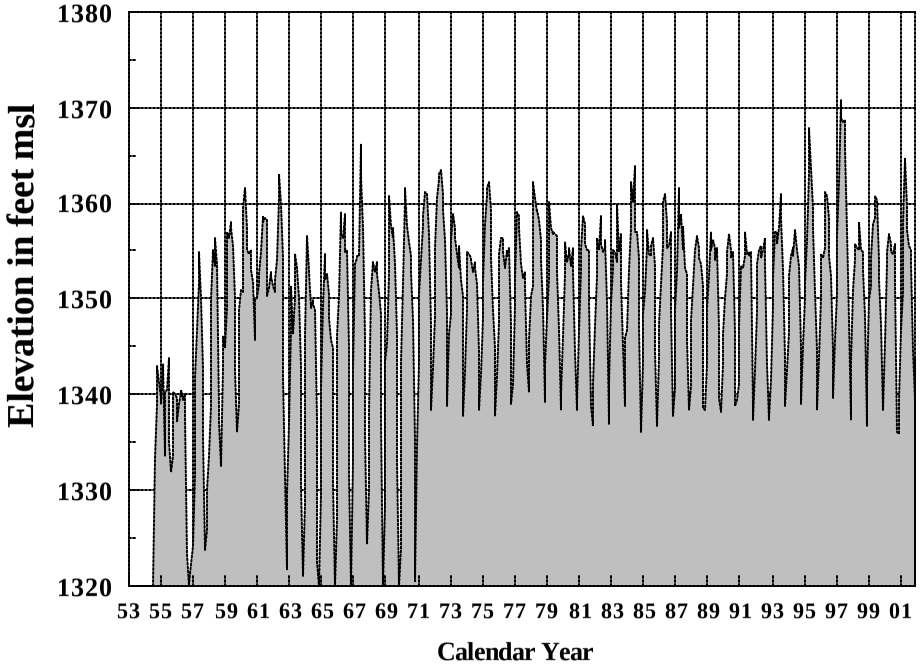


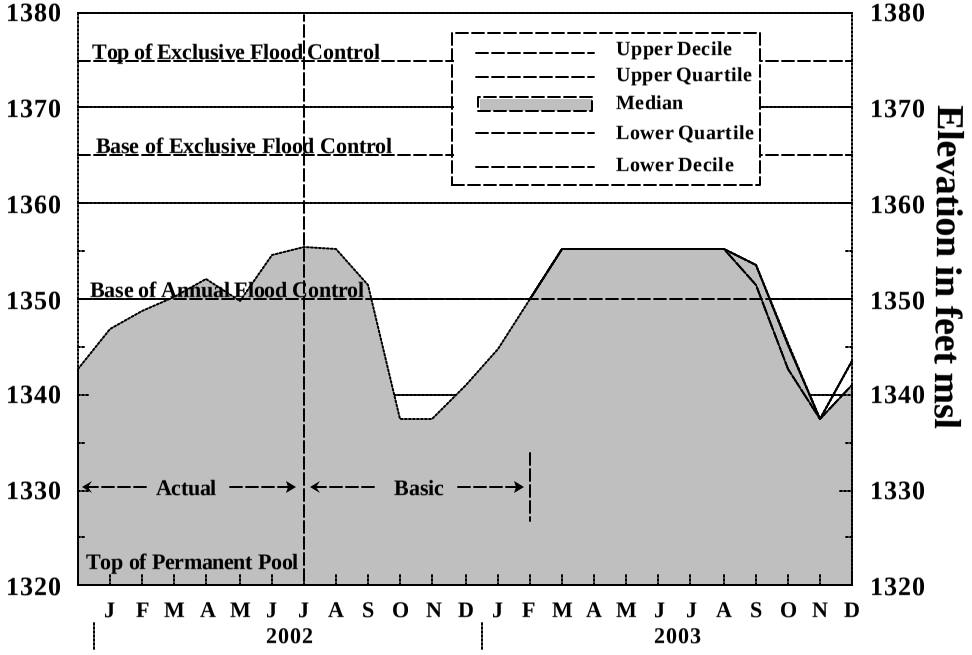


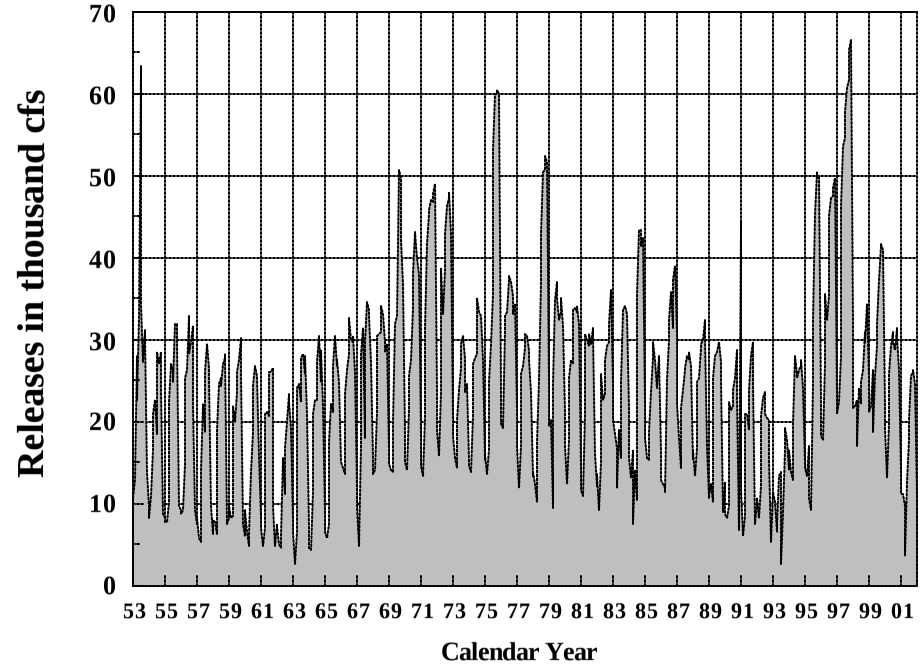


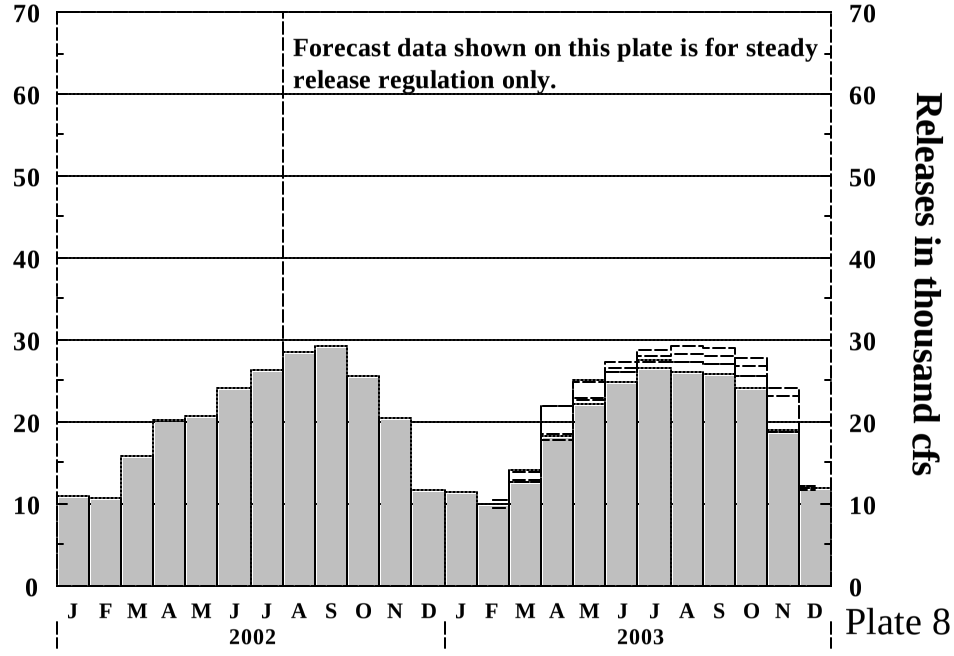


Fort Randall
Elevations and Releases



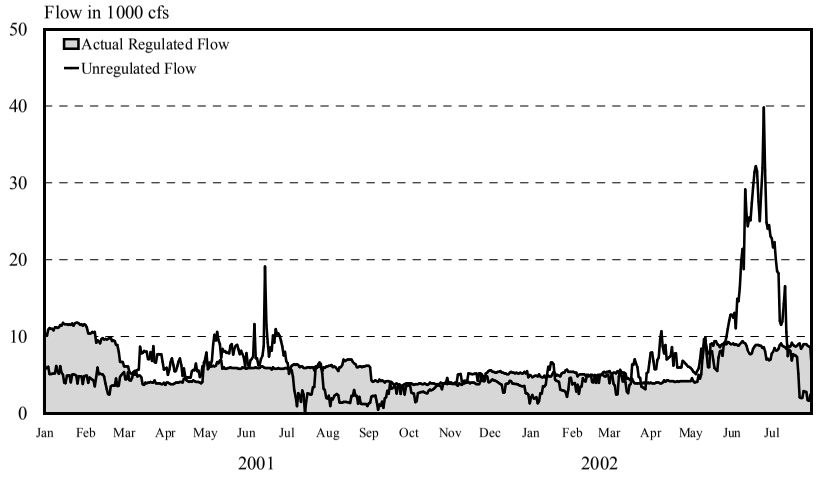




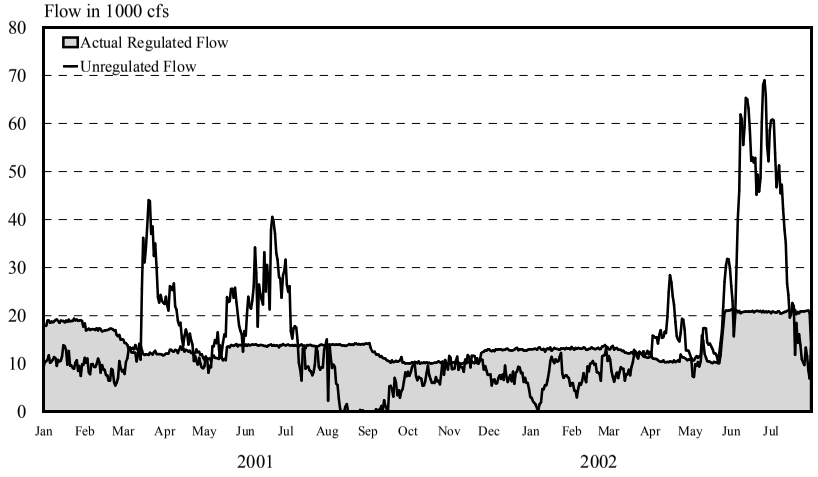


Reservoir Release and Unregulated Flow

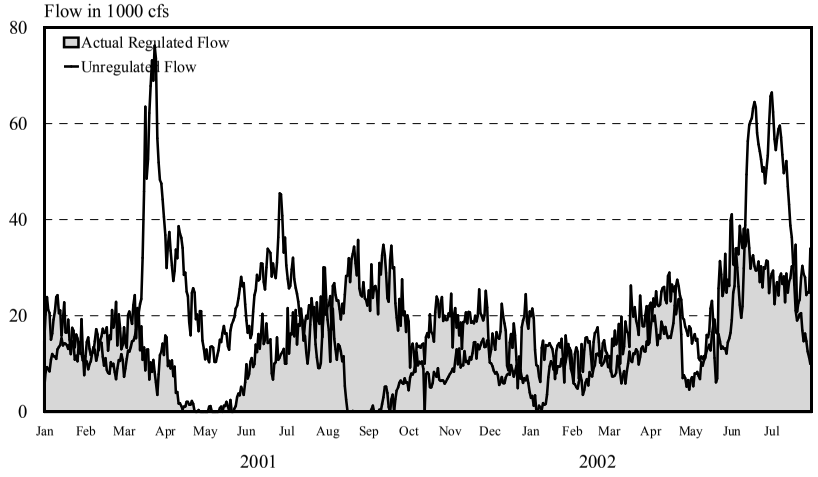
Fort Peck



Garrison



Oahe



Gavins Point

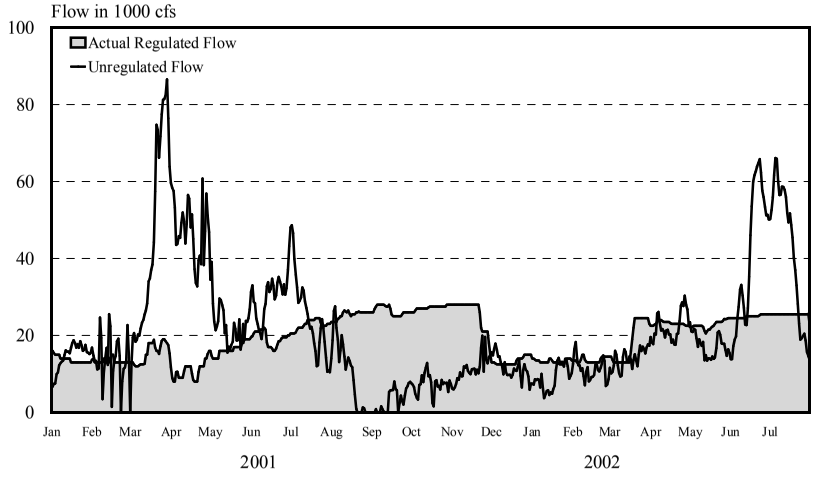


Plate 9

System Gross Capability and Average Monthly Generation

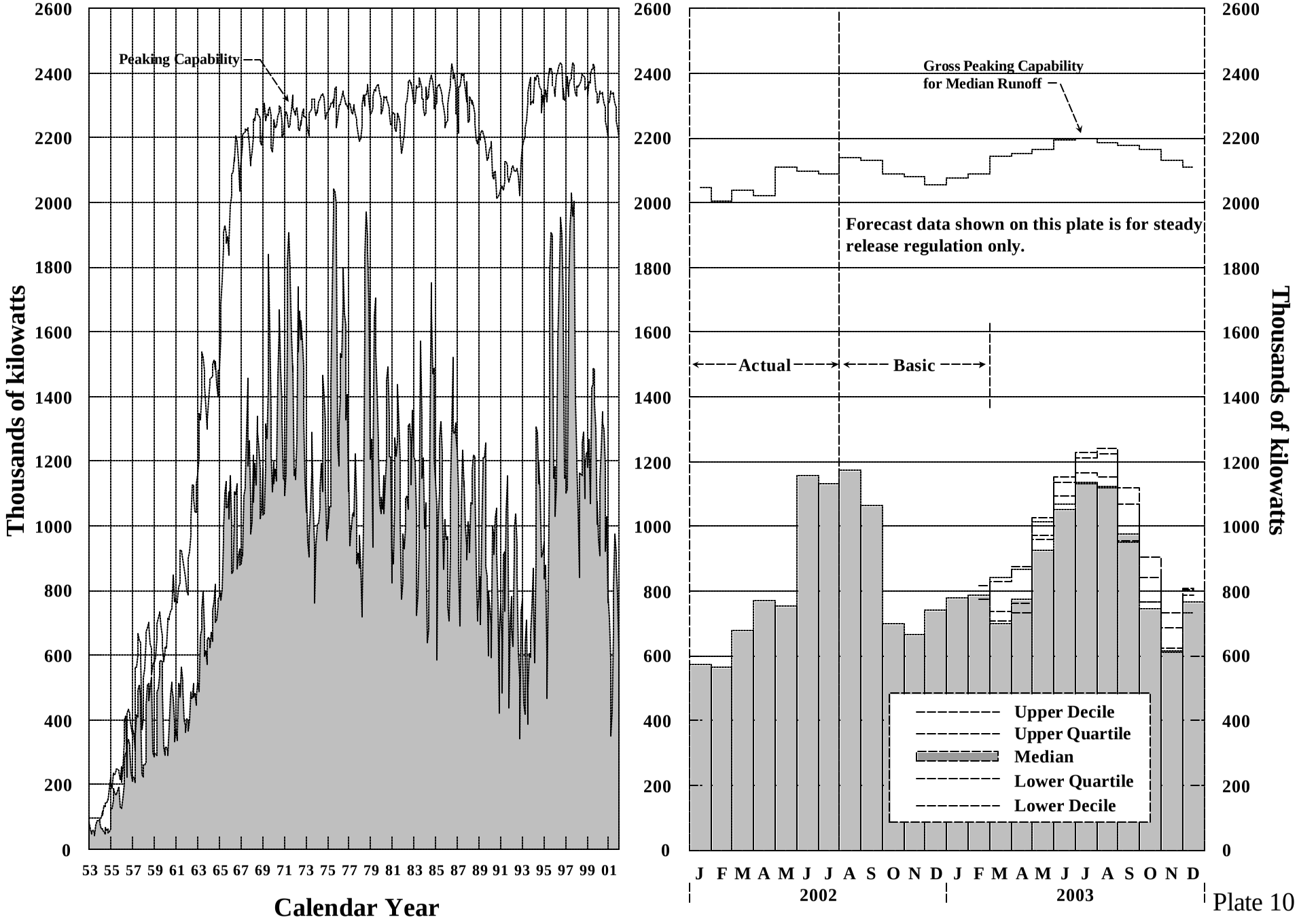


Plate 10

VALUES IN 1000 AF EXCEPT AS INDICATED

31JUL02		2002							2003
	INI-SUM	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	28FEB
--FORT PECK--										
NAT INFLOW	2425	300	320	400	195	91	104	335	315	365
DEPLETION	-480	-37	-138	-76	-12	-6	-6	-72	-84	-49
EVAPORATION	355	72	90	79	36	17	19	41		
MOD INFLOW	2550	265	368	397	171	80	91	366	399	414
RELEASE	3425	553	417	309	150	69	111	615	646	555
STOR CHANGE	-875	-288	-49	88	21	10	-20	-249	-247	-141
STORAGE	12247	11959	11910	11997	12019	12029	12009	11760	11513	11372
ELEV FTMSL	2219.8	2218.2	2217.9	2218.4	2218.5	2218.6	2218.4	2217.0	2215.6	2214.8
DISCH KCFS	8.6	9.0	7.0	5.0	5.0	5.0	7.0	10.0	10.5	10.0
POWER										
AVE POWER MW		116	90	65	65	64	90	128	133	126
PEAK POW MW		193	193	194	194	194	194	192	190	189
ENERGY GWH	528.7	86.0	64.6	48.0	23.3	10.8	17.3	95.0	99.0	84.7
--GARRISON--										
NAT INFLOW	2610	400	400	525	205	96	109	255	260	360
DEPLETION	-83	32	-94	60	-51	-24	-27	-18	7	32
CHAN STOR	-15	-4	21	20		0	-21	-31	-5	5
EVAPORATION	419	87	108	93	42	20	22	48		
REG INFLOW	5684	831	823	701	364	170	205	809	893	889
RELEASE	8224	1291	1160	857	415	222	301	1230	1414	1333
STOR CHANGE	-2539	-461	-337	-155	-51	-52	-97	-421	-521	-444
STORAGE	16236	15775	15438	15283	15232	15180	15083	14662	14141	13697
ELEV FTMSL	1831.1	1829.5	1828.3	1827.7	1827.5	1827.3	1827.0	1825.4	1823.4	1821.7
DISCH KCFS	20.8	21.0	19.5	13.9	13.9	16.0	19.0	20.0	23.0	24.0
POWER										
AVE POWER MW		250	230	164	164	188	222	232	263	271
PEAK POW MW		354	351	349	348	348	347	342	336	331
ENERGY GWH	1156.9	186.0	165.7	122.1	58.9	31.5	42.6	172.5	195.6	182.0
--OAHE--										
NAT INFLOW	340	35	80	60	33	15	17		10	90
DEPLETION	164	83	21	-6	3	1	1	13	18	30
CHAN STOR	-16	-1	7	27	0	-10	-15	-5	-15	-5
EVAPORATION	364	75	93	81	37	17	19	42		
REG INFLOW	8020	1167	1134	869	408	209	284	1170	1392	1388
RELEASE	7902	1778	1466	666	710	333	201	931	935	882
STOR CHANGE	118	-611	-332	203	-302	-123	82	239	457	506
STORAGE	14191	13580	13247	13450	13149	13025	13107	13346	13803	14309
ELEV FTMSL	1590.8	1588.3	1586.9	1587.7	1586.4	1585.9	1586.3	1587.3	1589.2	1591.2
DISCH KCFS	27.2	28.9	24.6	10.8	23.9	24.0	12.7	15.1	15.2	15.9
POWER										
AVE POWER MW		338	285	126	275	275	146	175	177	187
PEAK POW MW		612	605	609	603	600	602	607	617	627
ENERGY GWH	1110.6	251.2	205.1	93.5	99.0	46.2	28.0	130.0	131.8	125.7
--BIG BEND--										
EVAPORATION	97	20	25	22	10	5	5	11		
REG INFLOW	7805	1758	1441	645	700	328	196	919	935	882
RELEASE	7791	1744	1441	645	700	328	196	919	935	882
STORAGE	1668	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1419.8	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	26.5	28.4	24.2	10.5	23.5	23.6	12.4	15.0	15.2	15.9
POWER										
AVE POWER MW		133	115	53	118	118	62	75	75	76
PEAK POW MW		509	523	538	538	538	538	538	538	529
ENERGY GWH	457.8	98.6	82.7	39.5	42.4	19.9	12.0	55.8	55.7	51.2
--FORT RANDALL--										
NAT INFLOW	160	30	30	10	5	2	3	10	20	50
DEPLETION	34	15	7	1	1	0	1	3	3	3
EVAPORATION	104	25	31	22	8	4	4	10		
REG INFLOW	7806	1734	1434	625	694	326	195	916	952	929
RELEASE	8254	1756	1742	1570	694	326	196	713	701	555
STOR CHANGE	-448	-22	-308	-945	0	0	-1	203	251	374
STORAGE	3572	3550	3242	2297	2297	2297	2296	2499	2750	3124
ELEV FTMSL	1355.5	1355.2	1351.5	1337.5	1337.5	1337.5	1337.5	1341.0	1344.8	1350.0
DISCH KCFS	26.3	28.6	29.3	25.5	23.3	23.5	12.4	11.6	11.4	10.0
POWER										
AVE POWER MW		240	242	196	169	170	90	86	87	80
PEAK POW MW		355	343	283	284	284	283	300	317	338
ENERGY GWH	788.4	178.8	174.4	146.0	60.7	28.5	17.3	63.9	65.0	53.6
--GAVINS POINT--										
NAT INFLOW	650	30	75	100	60	28	32	100	100	125
DEPLETION	28	10	-5	2	5	2	3	10	1	
CHAN STOR	30	-4	-1	7	4	0	21	1	0	3
EVAPORATION	36	7	9	8	4	2	2	4		
REG INFLOW	8870	1765	1811	1666	750	350	244	800	800	683
RELEASE	8852	1734	1785	1666	750	350	244	800	800	722
STOR CHANGE	18	31	26							-39
STORAGE	340	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1205.3	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	25.5	28.2	30.0	27.1	25.2	25.2	15.4	13.0	13.0	13.0
POWER										
AVE POWER MW		96	103	95	88	88	55	46	46	46
PEAK POW MW		115	117	117	117	117	117	78	78	76
ENERGY GWH	372.5	71.2	74.0	70.6	31.8	14.9	10.5	34.4	34.4	30.8
--GAVINS POINT - SIOUX CITY--										
NAT INFLOW	460	70	80	70	38	18	20	45	35	85
DEPLETION	109	33	21	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY										
KAF	9203	1771	1844	1727	782	365	261	834	823	794
KCFS		28.8	31.0	28.1	26.3	26.3	16.5	13.6	13.4	14.3
--TOTAL--										
NAT INFLOW	6645	865	985	1165	535	250	285	745	740	1075
DEPLETION	-228	136	-188	-10	-50	-23	-26	-53	-43	29
CHAN STOR	-8	-9	26	47	3	-10	-14	-35	-19	3
EVAPORATION	1374	286	356	305	136	63	72	157		
STORAGE	48254	46917	45916	45106	44775	44610	44574	44347	44287	44542
SYSTEM POWER										
AVE POWER MW		1172	1065	699	878	903	665	741	781	786
PEAK POW MW		2139	2131	2090	2084	2080	2081	2057	2076	2090
ENERGY GWH	4414.9	871.9	766.5	519.8	316.2	151.8	127.6	551.6	581.4	528.1
DAILY GWH		28.1	25.5	16.8	21.1	21.7	16.0	17.8	18.8	18.9

INI-SUM 31AUG 30SEP 31OCT 15NOV 22NOV 30NOV 31DEC 31JAN 28FEB

VALUES IN 1000 AF EXCEPT AS INDICATED

31JUL02	2002							2003	
INI-SUM	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	28FEB
--FORT PECK--									
NAT INFLOW 2910	360	384	480	234	109	125	402	378	438
DEPLETION -682	-39	-105	-82	-37	-17	-20	-127	-150	-105
EVAPORATION 242	54	68	60	14	7	8	32		
MOD INFLOW 3350	345	421	502	257	120	137	497	528	543
RELEASE 3720	553	417	335	162	76	127	615	769	666
STOR CHANGE -370	-209	4	167	95	44	10	-117	-241	-123
STORAGE 12247	12038	12043	12210	12304	12348	12358	12241	12000	11877
ELEV FTMSL 2219.8	2218.6	2218.6	2219.6	2220.1	2220.3	2220.4	2219.7	2218.4	2217.7
DISCH KCFS 8.6	9.0	7.0	5.5	5.5	5.5	8.0	10.0	12.5	12.0
POWER									
AVE POWER MW	116	90	70	71	71	103	129	160	153
PEAK POW MW	194	194	195	196	196	196	196	194	193
ENERGY GWH 578.4	86.1	64.7	52.3	25.4	11.9	19.9	96.0	119.2	102.9
--GARRISON--									
NAT INFLOW 3132	480	480	630	246	115	131	306	312	432
DEPLETION 80	101	-54	57	-31	-14	-17	-12	12	38
CHAN STOR -35	-4	21	16	0		-26	-21	-26	5
EVAPORATION 287	65	81	71	17	8	9	37		
REG INFLOW 6449	863	890	853	422	197	239	876	1043	1066
RELEASE 8370	1291	1190	864	418	195	317	1230	1476	1388
STOR CHANGE -1921	-428	-300	-11	4	2	-78	-354	-433	-323
STORAGE 16236	15808	15507	15497	15501	15503	15425	15071	14638	14315
ELEV FTMSL 1831.1	1829.6	1828.5	1828.5	1828.5	1828.5	1828.2	1826.9	1825.3	1824.1
DISCH KCFS 20.8	21.0	20.0	14.1	14.1	14.1	20.0	20.0	24.0	25.0
POWER									
AVE POWER MW	250	236	166	166	166	235	234	277	286
PEAK POW MW	354	351	351	351	351	350	347	342	338
ENERGY GWH 1185.1	186.0	170.1	123.6	59.8	27.9	45.2	174.1	206.4	192.0
--OAHE--									
NAT INFLOW 408	42	96	72	39	18	21		12	108
DEPLETION 164	83	21	-6	3	1	1	13	18	30
CHAN STOR -20	-1	5	29	0	0	-29	0	-19	-5
EVAPORATION 251	57	71	62	15	7	8	33		
REG INFLOW 8343	1192	1199	909	440	205	300	1184	1451	1462
RELEASE 7590	1753	1428	563	683	319	189	900	912	845
STOR CHANGE 753	-561	-228	346	-243	-114	111	284	539	617
STORAGE 14191	13630	13402	13748	13506	13392	13503	13787	14327	14944
ELEV FTMSL 1590.8	1588.5	1587.5	1589.0	1587.9	1587.5	1587.9	1589.1	1591.3	1593.8
DISCH KCFS 27.2	28.5	24.0	9.2	22.9	23.0	11.9	14.6	14.8	15.2
POWER									
AVE POWER MW	333	278	107	267	266	139	171	175	181
PEAK POW MW	613	608	616	611	608	611	617	627	640
ENERGY GWH 1073.9	247.8	200.3	79.5	96.0	44.7	26.6	127.1	129.9	122.0
--BIG BEND--									
EVAPORATION 66	15	19	16	4	2	2	9		
REG INFLOW 7525	1738	1409	547	679	317	187	891	912	845
RELEASE 7511	1724	1409	547	679	317	187	891	912	845
STORAGE 1668	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL 1419.8	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS 26.5	28.0	23.7	8.9	22.8	22.8	11.8	14.5	14.8	15.2
POWER									
AVE POWER MW	131	112	45	114	115	60	73	73	73
PEAK POW MW	509	523	538	538	538	538	538	538	529
ENERGY GWH 441.2	97.5	80.9	33.5	41.2	19.2	11.4	54.1	54.3	49.0
--FORT RANDALL--									
NAT INFLOW 192	36	36	12	6	3	3	12	24	60
DEPLETION 34	15	7	1	1	0	1	3	3	3
EVAPORATION 72	19	23	16	3	1	2	7		
REG INFLOW 7588	1726	1415	534	679	318	189	893	933	902
RELEASE 8036	1748	1724	1478	679	318	189	690	683	528
STOR CHANGE -448	-22	-309	-944	0	0	0	203	250	374
STORAGE 3572	3550	3241	2297	2297	2297	2297	2500	2750	3124
ELEV FTMSL 1355.5	1355.2	1351.5	1337.5	1337.5	1337.5	1337.5	1341.0	1344.8	1350.0
DISCH KCFS 26.3	28.4	29.0	24.0	22.8	22.9	11.9	11.2	11.1	9.5
POWER									
AVE POWER MW	239	240	185	165	166	87	83	85	76
PEAK POW MW	355	343	283	284	284	284	300	317	338
ENERGY GWH 768.4	178.0	172.7	137.6	59.4	27.8	16.7	61.9	63.3	51.0
--GAVINS POINT--									
NAT INFLOW 780	36	90	120	72	34	38	120	120	150
DEPLETION 28	10	-5	2	5	2	3	10	1	
CHAN STOR 31	-4	-1	9	2	0	20	1	0	3
EVAPORATION 24	5	7	6	1	1	1	3		
REG INFLOW 8795	1765	1811	1599	747	349	244	798	802	681
RELEASE 8777	1734	1785	1599	747	349	244	798	802	720
STOR CHANGE 18	31	26							-39
STORAGE 340	371	397	397	397	397	397	397	397	358
ELEV FTMSL 1205.3	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS 25.5	28.2	30.0	26.0	25.1	25.1	15.4	13.0	13.0	13.0
POWER									
AVE POWER MW	96	103	91	88	88	55	46	46	46
PEAK POW MW	115	117	117	117	117	117	78	78	76
ENERGY GWH 369.4	71.2	74.0	67.8	31.7	14.8	10.5	34.3	34.4	30.7
--GAVINS POINT - SIOUX CITY--									
NAT INFLOW 552	84	96	84	45	21	24	54	42	102
DEPLETION 109	33	21	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY									
KAF 9220	1785	1860	1674	787	367	266	841	832	809
KCFS	29.0	31.3	27.2	26.4	26.4	16.7	13.7	13.5	14.6
--TOTAL--									
NAT INFLOW 7974	1038	1182	1398	642	300	342	894	888	1290
DEPLETION -267	203	-115	-19	-55	-25	-29	-102	-104	-21
CHAN STOR -32	-9	24	46	1	0	-34	-19	-45	4
EVAPORATION 943	215	269	231	54	25	29	120		
STORAGE 48254	47080	46272	45831	45687	45619	45662	45678	45794	46300
SYSTEM POWER									
AVE POWER MW	1165	1059	664	871	871	678	736	817	815
PEAK POW MW	2141	2136	2100	2097	2094	2096	2074	2096	2113
ENERGY GWH 4416.4	866.7	762.7	494.4	313.5	146.3	130.2	547.4	607.6	547.6
DAILY GWH	28.0	25.4	15.9	20.9	20.9	16.3	17.7	19.6	19.6

INI-SUM 31AUG 30SEP 31OCT 15NOV 22NOV 30NOV 31DEC 31JAN 28FEB

VALUES IN 1000 AF EXCEPT AS INDICATED

	31JUL02	2002							2003
	INI-SUM	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	28FEB
--FORT PECK--										
NAT INFLOW	1940	240	256	320	156	73	83	268	252	292
DEPLETION	-302	-14	-90	-52	-25	-12	-13	-83	-19	6
EVAPORATION	439	90	112	98	44	21	24	51		
MOD INFLOW	1803	164	234	274	137	64	73	300	271	286
RELEASE	3128	553	387	249	120	56	95	584	584	500
STOR CHANGE	-1325	-389	-153	26	16	8	-22	-284	-313	-214
STORAGE	12247	11858	11705	11731	11747	11755	11733	11449	11136	10922
ELEV FTMSL	2219.8	2217.6	2216.7	2216.9	2217.0	2217.0	2216.9	2215.2	2213.4	2212.1
DISCH KCFS	8.6	9.0	6.5	4.0	4.0	4.0	6.0	9.5	9.5	9.0
POWER										
AVE POWER MW		115	83	52	52	51	77	120	119	112
PEAK POW MW		193	192	192	192	192	192	190	187	185
ENERGY GWH	479.6	85.9	59.7	38.4	18.6	8.6	14.7	89.5	88.8	75.4
--GARRISON--										
NAT INFLOW	2088	320	320	420	164	77	87	204	208	288
DEPLETION	-263	10	-115	30	-69	-32	-37	-39	-14	3
CHAN STOR	-4	-4	26	25		0	-21	-36		5
EVAPORATION	523	109	135	116	52	24	28	59		
REG INFLOW	4951	750	713	548	301	140	171	732	806	790
RELEASE	8038	1291	1160	791	383	179	254	1230	1445	1305
STOR CHANGE	-3086	-541	-448	-243	-81	-39	-83	-498	-639	-515
STORAGE	16236	15695	15247	15005	14923	14885	14802	14304	13665	13150
ELEV FTMSL	1831.1	1829.2	1827.6	1826.7	1826.4	1826.2	1825.9	1824.0	1821.5	1819.5
DISCH KCFS	20.8	21.0	19.5	12.9	12.9	12.9	16.0	20.0	23.5	23.5
POWER										
AVE POWER MW		250	229	151	150	150	186	230	266	262
PEAK POW MW		353	348	346	345	345	344	338	331	325
ENERGY GWH	1122.6	185.8	165.2	112.1	54.0	25.3	35.7	171.1	197.7	175.8
--OAHE--										
NAT INFLOW	272	28	64	48	26	12	14		8	72
DEPLETION	164	83	21	-6	3	1	1	13	18	30
CHAN STOR	-14	-1	7	33	0	0	-15	-20	-17	0
EVAPORATION	452	95	116	101	45	21	24	51		
REG INFLOW	7679	1141	1094	777	361	169	227	1145	1418	1347
RELEASE	8121	1803	1504	701	728	341	211	956	956	920
STOR CHANGE	-442	-663	-409	75	-367	-172	17	189	461	427
STORAGE	14191	13528	13119	13195	12827	12655	12672	12861	13322	13749
ELEV FTMSL	1590.8	1588.0	1586.3	1586.6	1585.0	1584.3	1584.4	1585.2	1587.2	1589.0
DISCH KCFS	27.2	29.3	25.3	11.4	24.5	24.6	13.3	15.6	15.6	16.6
POWER										
AVE POWER MW		342	291	132	280	279	151	178	179	193
PEAK POW MW		611	602	604	595	591	592	596	607	616
ENERGY GWH	1133.9	254.5	209.8	98.0	100.9	46.9	29.1	132.1	133.2	129.5
--BIG BEND--										
EVAPORATION	121	24	31	27	12	6	7	14		
REG INFLOW	8000	1779	1473	674	716	336	204	942	956	920
RELEASE	7986	1765	1473	674	716	336	204	942	956	920
STORAGE	1668	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1419.8	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	26.5	28.7	24.7	11.0	24.1	24.2	12.9	15.3	15.6	16.6
POWER										
AVE POWER MW		134	117	55	121	121	65	77	77	79
PEAK POW MW		509	523	538	538	538	538	538	538	529
ENERGY GWH	469.3	99.8	84.5	41.3	43.4	20.3	12.5	57.2	56.9	53.4
--FORT RANDALL--										
NAT INFLOW	128	24	24	8	4	2	2	8	16	40
DEPLETION	34	15	7	1	1	0	1	3	3	3
EVAPORATION	130	32	39	27	10	5	5	12		
REG INFLOW	7943	1742	1451	647	707	332	202	935	969	957
RELEASE	8390	1764	1759	1592	707	332	202	732	719	583
STOR CHANGE	-448	-22	-308	-945	0	0	0	203	250	374
STORAGE	3572	3550	3242	2297	2297	2297	2297	2500	2750	3124
ELEV FTMSL	1355.5	1355.2	1351.5	1337.5	1337.5	1337.5	1337.5	1341.0	1344.8	1350.0
DISCH KCFS	26.3	28.7	29.6	25.9	23.8	23.9	12.7	11.9	11.7	10.5
POWER										
AVE POWER MW		241	245	199	172	173	93	88	90	84
PEAK POW MW		355	343	283	284	284	284	300	317	338
ENERGY GWH	801.0	179.6	176.1	148.0	61.9	29.0	17.8	65.6	66.7	56.3
--GAVINS POINT--										
NAT INFLOW	520	24	60	80	48	22	26	80	80	100
DEPLETION	28	10	-5	2	5	2	3	10	1	
CHAN STOR	29	-5	-2	7	4	0	21	1	0	2
EVAPORATION	44	8	11	10	5	2	2	5		
REG INFLOW	8867	1765	1811	1666	750	350	243	798	799	685
RELEASE	8849	1734	1785	1666	750	350	243	798	799	724
STOR CHANGE	18	31	26							-39
STORAGE	340	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1205.3	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	25.5	28.2	30.0	27.1	25.2	25.2	15.3	13.0	13.0	13.0
POWER										
AVE POWER MW		96	103	95	88	88	54	46	46	46
PEAK POW MW		115	117	117	117	117	117	78	78	76
ENERGY GWH	372.4	71.2	74.0	70.6	31.8	14.9	10.4	34.3	34.3	30.9
--GAVINS POINT - SIOUX CITY--										
NAT INFLOW	368	56	64	56	30	14	16	36	28	68
DEPLETION	109	33	21	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY										
KAF	9108	1757	1828	1713	775	362	256	823	815	779
KCFS		28.6	30.7	27.9	26.0	26.0	16.1	13.4	13.3	14.0
--TOTAL--										
NAT INFLOW	5316	692	788	932	428	200	228	596	592	860
DEPLETION	-230	137	-161	-16	-81	-38	-43	-85	1	55
CHAN STOR	3	-10	31	58	2	0	-14	-55	-17	8
EVAPORATION	1710	358	444	379	168	78	89	193		
STORAGE	48254	46684	45393	44306	43874	43671	43583	43192	42952	42985
SYSTEM POWER										
AVE POWER MW		1179	1069	683	863	863	626	739	776	776
PEAK POW MW		2136	2124	2079	2071	2067	2066	2039	2058	2069
ENERGY GWH	4378.9	876.9	769.4	508.4	310.6	145.0	120.1	549.7	577.5	521.3
DAILY GWH		28.3	25.6	16.4	20.7	20.7	15.0	17.7	18.6	18.6

VALUES IN 1000 AF EXCEPT AS INDICATED

	28FEB03	2003											2004			
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	9600	319	149	192	797	1604	2491	1219	456	379	531	210	98	112	346	297	400
DEPLETION	268	-31	-15	-19	69	291	489	164	-96	-105	-51	-20	-9	-11	-116	-150	-122
EVAPORATION	320							21	66	84	74	18	8	10	39		
MOD INFLOW	9012	351	164	210	728	1313	2002	1034	486	400	508	212	99	113	423	447	522
RELEASE	5057	179	69	89	298	369	506	523	523	357	279	119	55	127	523	553	489
STOR CHANGE	3956	172	94	121	430	944	1496	512	-37	43	229	94	44	-14	-100	-106	33
STORAGE	11877	12049	12143	12265	12695	13639	15135	15647	15610	15653	15882	15976	16019	16005	15906	15799	15832
ELEV FTMSL	2217.7	2218.7	2219.2	2219.9	2222.3	2227.3	2234.7	2237.0	2236.9	2237.0	2238.1	2238.5	2238.7	2238.6	2238.2	2237.7	2237.9
DISCH KCFS	12.0	6.0	5.0	5.0	5.0	6.0	8.5	8.5	8.5	6.0	4.5	4.0	4.0	8.0	8.5	9.0	8.5
POWER																	
AVE POWER MW		77	64	65	65	79	114	116	117	82	63	55	55	110	117	124	117
PEAK POW MW		194	195	196	198	203	209	211	210	211	211	212	212	212	211	211	211
ENERGY GWH	830.7	27.7	10.8	14.0	46.8	59.0	82.4	86.5	86.8	59.3	46.5	19.8	9.3	21.2	87.1	92.1	81.4
--GARRISON--																	
NAT INFLOW	14199	515	240	309	1376	1934	3530	2647	841	574	652	260	121	139	278	348	434
DEPLETION	1213	33	16	20	9	268	919	545	53	-121	-3	-98	-46	-52	-132	-116	-83
CHAN STOR	37	63	10			-10	-26	0		25	14	5		-40	-5	-5	5
EVAPORATION	350							23	74	93	80	19	9	10	42		
REG INFLOW	17731	724	305	378	1665	2025	3091	2602	1237	984	868	463	213	268	886	1012	1011
RELEASE	14832	476	222	286	1131	1291	1428	1414	1353	1131	1058	458	214	286	1230	1476	1381
STOR CHANGE	2899	248	83	93	534	733	1663	1188	-116	-147	-189	5	0	-18	-344	-463	-370
STORAGE	14315	14562	14645	14738	15272	16005	17668	18856	18740	18593	18403	18408	18408	18390	18046	17583	17213
ELEV FTMSL	1824.1	1825.0	1825.3	1825.7	1827.7	1830.3	1836.0	1839.9	1839.5	1839.0	1838.4	1838.5	1838.5	1838.4	1837.3	1835.8	1834.5
DISCH KCFS	25.0	16.0	16.0	16.0	19.0	21.0	24.0	23.0	22.0	19.0	17.2	15.4	15.4	18.0	20.0	24.0	24.0
POWER																	
AVE POWER MW		184	185	185	221	248	291	287	278	240	216	194	194	226	250	297	294
PEAK POW MW		341	342	343	349	357	373	385	383	382	380	380	380	380	377	372	369
ENERGY GWH	2200.6	66.2	31.0	40.0	159.2	184.4	209.2	213.6	206.5	172.5	161.0	69.7	32.5	43.4	185.9	220.8	204.7
--OAHE--																	
NAT INFLOW	3850	559	261	335	474	347	881	297	123	163	102	109	51	58	22	10	59
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	7	41			-13	-8	-13	4	4	12	8	8		-11	-8	-17	
EVAPORATION	327							22	69	86	75	18	8	10	40		
REG INFLOW	17792	1054	473	608	1547	1568	2177	1555	1321	1197	1100	555	256	322	1193	1454	1415
RELEASE	13936	381	197	229	765	1238	1415	1687	1772	1544	1063	511	237	205	1076	945	670
STOR CHANGE	3857	672	276	378	781	330	762	-132	-452	-347	37	44	18	117	117	509	745
STORAGE	14944	15616	15892	16270	17051	17381	18143	18012	17560	17213	17249	17294	17312	17429	17546	18056	18800
ELEV FTMSL	1593.8	1596.3	1597.4	1598.7	1601.5	1602.7	1605.2	1604.8	1603.3	1602.1	1602.2	1602.4	1602.4	1602.8	1603.2	1605.0	1607.4
DISCH KCFS	15.2	12.8	14.2	12.9	12.9	20.1	23.8	27.4	28.8	26.0	17.3	17.2	17.1	12.9	17.5	15.4	11.6
POWER																	
AVE POWER MW		155	173	158	160	253	301	349	365	326	217	216	215	163	221	195	150
PEAK POW MW		652	657	664	679	685	699	696	688	682	682	683	684	686	688	697	710
ENERGY GWH	2127.4	55.9	29.1	34.2	115.4	188.1	216.9	259.9	271.5	235.0	161.8	77.8	36.1	31.4	164.5	145.4	104.4
--BIG BEND--																	
EVAPORATION	71							5	15	19	16	4	2	2	9		
REG INFLOW	13865	381	197	229	765	1238	1415	1682	1758	1526	1047	507	235	203	1067	945	670
RELEASE	13865	381	197	229	765	1238	1415	1682	1758	1526	1047	507	235	203	1067	945	670
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	15.2	12.8	14.2	12.9	12.9	20.1	23.8	27.4	28.6	25.6	17.0	17.0	17.0	12.8	17.4	15.4	11.6
POWER																	
AVE POWER MW		61	66	60	60	94	111	128	134	122	84	86	85	65	86	75	56
PEAK POW MW		517	509	509	509	509	509	509	509	517	538	538	538	538	538	538	529
ENERGY GWH	800.1	21.9	11.1	13.0	43.4	70.1	80.1	95.3	99.5	87.5	62.1	30.8	14.3	12.4	63.8	55.7	38.9
--FORT RANDALL--																	
NAT INFLOW	1501	190	89	114	298	159	224	111	72	92	60	5	2	3	23	10	49
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	82							6	19	24	19	4	2	2	8		
REG INFLOW	15205	570	285	343	1059	1388	1627	1769	1796	1587	1087	507	236	204	1079	952	716
RELEASE	15205	280	151	343	1059	1388	1627	1769	1796	1731	1712	821	383	226	713	695	512
STOR CHANGE	0	291	134					0	0	-144	-625	-314	-148	-22	366	257	204
STORAGE	3124	3415	3549	3549	3549	3549	3549	3549	3549	3405	2780	2467	2319	2297	2663	2920	3124
ELEV FTMSL	1350.0	1353.6	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1353.5	1345.3	1340.4	1337.9	1337.5	1343.5	1347.2	1350.0
DISCH KCFS	9.5	9.4	10.9	19.2	17.8	22.6	27.3	28.8	29.2	29.1	27.8	27.6	27.6	14.2	11.6	11.3	8.9
POWER																	
AVE POWER MW		78	92	162	151	190	230	242	245	243	223	209	202	104	87	89	72
PEAK POW MW		350	355	355	355	355	355	355	355	349	319	297	285	284	311	328	338
ENERGY GWH	1507.2	28.0	15.4	35.1	108.5	141.7	165.6	179.9	182.6	174.8	165.9	75.1	33.9	19.9	64.7	65.8	50.0
--GAVINS POINT--																	
NAT INFLOW	2252	107	50	64	246	319	281	211	170	135	157	60	28	32	95	106	191
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	0	0	-3	-16	3	-9	-9	-3	-1	0	2	0	0	25	5	1	4
EVAPORATION	26							2	5	7	6	1	1	1	3		
REG INFLOW	17317	387	198	391	1303	1679	1874	1937	1950	1865	1863	875	408	279	800	800	707
RELEASE	17317	387	198	391	1303	1679	1874	1937	1937	1839	1863	875	408	279	800	800	746
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	14.3	21.9	21.9	27.3	31.5	31.5	31.5	30.9	30.3	29.4	29.4	17.6	13.0	13.0	13.0
POWER																	
AVE POWER MW		46	50	75	75	93	104	104	105	105	104	102	102	62	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	714.9	16.4	8.4	16.3	54.2	69.2	75.2	77.7	78.0	75.5	77.6	36.8	17.2	11.9	34.4	34.4	31.8
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	3100	195	91	117	1006	553	318	246	184	127	66	26	12	14	30	12	105
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	20176	576	286	504	2289	2198	2163	2147	2088	1944	1920	895	418	290	819	800	838
KCFS		19.4	20.6	28.2	38.5	35.7	36.4	34.9	34.0	32.7	31.2	30.1	30.1	18.3	13.3	13.0	14.6
--TOTAL--																	
NAT INFLOW	34502	1885	879	1131	4197	4916	7725	4731	1846	1470	1568	670	312	357	794	783	1238
DEPLETION	2486	30	14	18	152	683	1593	940	105	-179	-49	-105	-49	-56	-213	-235	-164
CHAN STOR	45	104	8	-16	-10	-28	-47	1	3	37	24	14	0	-25	-8	-21	9
EVAPORATION	1174							78	248	311	270	64	30	34	140		
STORAGE	46300	47683	48269	48861	50607	52614	56536	58103	57511	56942	56394	56223	56137	56200	56240	56437	57010
SYSTEM POWER																	
AVE POWER MW		600	630	706	733	958	1152	1227	1243	1118	907	861	853	731	807	826	735
PEAK POW MW		2168	2172	2181	2204	2223	2259	2270	2261	2258	2248	2227	2216	2216	2204	2225	2233
ENERGY GWH	8181.0	216.1	105.9	152.5	527.5	712.5	829.4	912.8	924.9	804.7	675.0	310.0	143.3	140.3	600.4	614.3	511.3
DAILY GWH		14.4	15.1	16.9	17.6	23.0	27.6	29.4	29.8	26.8	21.8	20.7	20.5	17.5	19.4	19.8	17.6

VALUES IN 1000 AF EXCEPT AS INDICATED

	28FEB03	2003											2004			
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	8901	296	138	178	739	1487	2309	1130	423	351	492	195	91	104	321	276	371
DEPLETION	215	-31	-15	-19	69	291	489	139	-95	-105	-73	-27	-12	-14	-125	-150	-107
EVAPORATION	340							20	64	81	72	33	15	17	38		
MOD INFLOW	8346	328	153	196	670	1196	1820	971	454	375	493	189	88	101	408	426	478
RELEASE	5218	179	69	89	327	430	536	553	553	322	275	133	62	95	523	553	518
STOR CHANGE	3128	149	83	107	343	766	1284	417	-100	53	218	56	26	6	-114	-127	-40
STORAGE	11877	12026	12109	12217	12559	13325	14609	15027	14927	14980	15199	15254	15281	15286	15172	15044	15005
ELEV FTMSL	2217.7	2218.5	2219.0	2219.6	2221.5	2225.6	2232.2	2234.1	2233.7	2233.9	2234.9	2235.2	2235.3	2235.4	2234.8	2234.2	2234.0
DISCH KCFS	12.0	6.0	5.0	5.0	5.5	7.0	9.0	9.0	9.0	5.4	4.5	4.5	4.5	6.0	8.5	9.0	9.0
POWER																	
AVE POWER MW		77	64	65	71	92	120	122	122	74	61	61	61	82	116	123	122
PEAK POW MW		194	195	195	198	202	207	208	208	208	209	209	209	209	209	208	208
ENERGY GWH	849.8	27.7	10.8	13.9	51.4	68.4	86.7	90.8	91.0	53.0	45.4	22.0	10.3	15.7	86.3	91.2	85.2
--GARRISON--																	
NAT INFLOW	12901	482	225	289	1250	1723	3207	2405	764	522	593	236	110	126	260	316	394
DEPLETION	1206	34	16	20	9	310	907	514	51	-121	-2	-94	-44	-50	-138	-120	-87
CHAN STOR	32	63	10		-5	-16	-21			36	9			-15	-25	-5	
EVAPORATION	366							22	71	88	77	35	16	18	40		
REG INFLOW	16579	689	289	358	1563	1828	2815	2422	1196	912	803	428	200	237	856	984	999
RELEASE	14619	476	215	277	1101	1291	1428	1445	1414	1087	885	428	200	286	1230	1476	1381
STOR CHANGE	1960	213	74	81	462	537	1387	978	-218	-175	-82	0	0	-48	-374	-491	-382
STORAGE	14315	14528	14601	14683	15145	15681	17068	18046	17827	17653	17570	17570	17570	17522	17148	16656	16275
ELEV FTMSL	1824.1	1824.9	1825.2	1825.5	1827.2	1829.2	1834.0	1837.3	1836.6	1836.0	1835.7	1835.7	1835.7	1835.6	1834.3	1832.6	1831.3
DISCH KCFS	25.0	16.0	15.5	15.5	18.5	21.0	24.0	23.5	23.0	18.3	14.4	14.4	14.4	18.0	20.0	24.0	24.0
POWER																	
AVE POWER MW		184	179	179	215	246	288	289	285	226	178	178	178	222	245	291	288
PEAK POW MW		341	341	342	347	353	367	377	375	373	372	372	372	372	368	363	359
ENERGY GWH	2139.2	66.2	30.0	38.7	154.7	183.4	207.0	215.1	212.2	162.9	132.6	64.1	29.9	42.6	182.5	216.5	200.6
--OAHE--																	
NAT INFLOW	3200	460	214	276	394	285	749	246	103	135	85	91	42	48	18	5	49
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	6	41	2		-13	-11	-13	2	2	20	17	0		-16	-9	-17	
EVAPORATION	347							21	67	83	72	32	15	17	38		
REG INFLOW	16908	955	422	539	1437	1503	2044	1534	1362	1136	922	485	226	300	1190	1449	1405
RELEASE	14064	562	108	265	858	1265	1402	1655	1719	1510	1019	493	229	204	1093	948	734
STOR CHANGE	2844	393	313	275	579	238	642	-122	-357	-374	-97	-8	-2	97	97	500	670
STORAGE	14944	15337	15650	15925	16504	16742	17384	17262	16906	16531	16434	16426	16424	16520	16618	17118	17788
ELEV FTMSL	1593.8	1595.3	1596.5	1597.5	1599.6	1600.4	1602.7	1602.3	1601.0	1599.7	1599.3	1599.3	1599.3	1599.6	1600.0	1601.8	1604.1
DISCH KCFS	15.2	18.9	7.8	14.8	14.4	20.6	23.6	26.9	28.0	25.4	16.6	16.6	16.5	12.8	17.8	15.4	12.8
POWER																	
AVE POWER MW		227	95	181	178	255	295	338	349	315	205	205	204	159	221	193	162
PEAK POW MW		647	653	658	669	673	685	683	676	669	667	667	667	669	671	680	692
ENERGY GWH	2117.4	81.9	16.0	39.2	128.1	190.1	212.3	251.5	259.9	226.9	152.8	73.9	34.3	30.6	164.2	143.4	112.4
--BIG BEND--																	
EVAPORATION	78							5	15	19	16	7	3	4	9		
REG INFLOW	13986	562	108	265	858	1265	1402	1651	1704	1491	1002	485	225	200	1084	948	734
RELEASE	13986	562	108	265	858	1265	1402	1651	1704	1491	1002	485	225	200	1084	948	734
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	15.2	18.9	7.8	14.8	14.4	20.6	23.6	26.8	27.7	25.1	16.3	16.3	16.2	12.6	17.6	15.4	12.8
POWER																	
AVE POWER MW		89	37	69	68	96	110	126	130	119	80	82	82	64	87	75	61
PEAK POW MW		510	509	509	509	509	509	509	509	517	538	538	538	538	538	538	529
ENERGY GWH	806.7	31.9	6.1	15.0	48.6	71.7	79.4	93.5	96.5	85.5	59.6	29.5	13.7	12.2	64.8	56.0	42.7
--FORT RANDALL--																	
NAT INFLOW	1200	142	66	85	239	150	195	89	65	64	38	3	1	1	18	5	39
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	88							6	19	24	19	7	3	3	8		
REG INFLOW	15019	702	174	349	1093	1406	1585	1716	1736	1525	1021	480	223	198	1092	950	770
RELEASE	15019	295	157	349	1093	1406	1585	1716	1736	1669	1651	790	369	219	726	713	546
STOR CHANGE	-1	408	17					0	0	-144	-630	-310	-146	-22	366	237	224
STORAGE	3124	3532	3549	3549	3549	3549	3549	3549	3549	3405	2775	2465	2319	2297	2663	2900	3124
ELEV FTMSL	1350.0	1355.0	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1353.5	1345.2	1340.4	1337.9	1337.5	1343.5	1347.0	1350.0
DISCH KCFS	9.5	9.9	11.3	19.5	18.4	22.9	26.6	27.9	28.2	28.0	26.8	26.5	26.6	13.8	11.8	11.6	9.5
POWER																	
AVE POWER MW		82	96	165	155	193	224	235	237	234	215	201	195	101	88	91	77
PEAK POW MW		354	355	355	355	355	355	355	355	349	318	297	285	284	311	327	338
ENERGY GWH	1489.3	29.7	16.1	35.7	111.9	143.6	161.5	174.6	176.6	168.6	160.1	72.3	32.7	19.4	65.8	67.5	53.3
--GAVINS POINT--																	
NAT INFLOW	1899	93	44	56	207	257	237	178	144	114	132	51	24	27	86	89	161
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	-1	-3	-16	2	-9	-7	-2	-1	0	2	1	0	24	4	0	4
EVAPORATION	28							2	5	7	6	3	1	1	3		
REG INFLOW	16775	388	198	389	1297	1636	1791	1851	1864	1781	1777	833	389	266	802	802	711
RELEASE	16775	388	198	389	1297	1636	1791	1851	1851	1755	1777	833	389	266	802	802	750
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	14.3	21.8	21.8	26.6	30.1	30.1	30.1	29.5	28.9	28.0	28.0	16.8	13.0	13.0	13.0
POWER																	
AVE POWER MW		46	50	75	75	91	101	101	102	102	101	98	98	59	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	698.3	16.4	8.4	16.2	54.0	67.5	72.8	75.2	75.6	73.1	75.1	35.3	16.5	11.4	34.5	34.4	32.0
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	2500	181	85	109	811	406	252	199	148	97	53	21	10	11	24	10	84
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	19034	563	280	495	2088	2008	2014	2014	1966	1830	1821	849	396	274	815	800	821
KCFS		18.9	20.2	27.7	35.1	32.6	33.8	32.8	32.0	30.8	29.6	28.5	28.5	17.3	13.3	13.0	14.3
--TOTAL--																	
NAT INFLOW	30601	1654	772	992	3640	4308	6949	4247	1647	1283	1393	595	278	317	727	701	1098
DEPLETION	2426	31	14	19	152	725	1581	884	104	-179	-70	-108	-50	-57	-228	-239	-153
CHAN STOR	37	103	10	-16	-16	-35	-41	0	1	56	28	1	0	-7	-30	-22	4
EVAPORATION	1247							76	241	302	261	117	54	62	135		
STORAGE	46300	47463	47950	48413	49797	51337	54651	55924	55262	54648	54057	53795	53672	53704	53679	53798	54231
SYSTEM POWER																	
AVE POWER MW		705	521	735	762	974	1138	1211	1226	1069	841	825	817	687	804	819	756
PEAK POW MW		2161	2167	2174	2192	2206	2238	2247	2238	2234	2222	2200	2189	2189	2175	2195	2203
ENERGY GWH	8100.7	253.8	87.5	158.7	548.7	724.6	819.7	900.7	911.8	770.0	625.6	297.1	137.3	131.9	598.1	609.0	526.1
DAILY GWH		16.9	12.5	17.6	18.3	23.4	27.3	29.1	29.4	25.7	20.2	19.8	19.6	16.5	19.3	19.6	18.1

28FEB03		2003										2004			
INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																
NAT INFLOW 7400	264	123	158	628	1210	1851	829	324	319	398	188	88	100	310	261	349
DEPLETION 122	-3	-1	-2	70	304	316	138	-87	-99	-64	-33	-15	-17	-122	-149	-114
EVAPORATION 397							24	76	95	83	38	18	20	43		
MOD INFLOW 6881	267	125	160	558	906	1535	667	335	323	379	182	85	97	389	410	463
RELEASE 5799	179	69	89	357	461	565	584	584	396	307	149	97	127	615	615	604
STOR CHANGE 1082	89	55	71	201	445	970	83	-249	-73	72	34	-12	-30	-226	-205	-141
STORAGE 11372	11461	11516	11587	11788	12233	13202	13285	13036	12963	13034	13068	13056	13026	12800	12595	12454
ELEV FTMSL 2214.8	2215.3	2215.6	2216.0	2217.2	2219.7	2225.0	2225.4	2224.1	2223.7	2224.1	2224.3	2224.2	2224.1	2222.8	2221.7	2220.9
DISCH KCFS 10.0	6.0	5.0	5.0	6.0	7.5	9.5	9.5	9.5	6.7	5.0	5.0	7.0	8.0	10.0	10.0	10.5
POWER																
AVE POWER MW	76	63	63	76	96	124	125	125	88	66	66	92	105	131	130	136
PEAK POW MW	190	190	191	192	196	201	202	200	200	200	200	200	200	199	198	197
ENERGY GWH 914.6	27.3	10.6	13.7	55.0	71.6	89.2	93.3	93.1	63.1	49.0	23.7	15.5	20.2	97.4	96.9	94.8
--GARRISON--																
NAT INFLOW 11001	469	219	282	853	1423	2958	2066	581	497	454	192	89	102	253	237	326
DEPLETION 1503	50	23	30	129	277	828	556	81	-89	34	-92	-43	-49	-102	-80	-51
CHAN STOR -5	42	11		-11	-16	-21			29	17	0	-20	-10	-20		-5
EVAPORATION 459							28	88	110	96	43	20	23	50		
REG INFLOW 14834	640	276	341	1070	1591	2674	2067	996	901	648	389	189	245	900	932	976
RELEASE 13527	476	208	268	1041	1199	1309	1322	1291	917	779	377	236	286	1230	1322	1265
STOR CHANGE 1306	164	67	73	29	392	1365	745	-295	-16	-132	12	-47	-41	-330	-390	-290
STORAGE 13697	13861	13928	14001	14030	14423	15788	16532	16237	16221	16090	16101	16054	16013	15683	15293	15003
ELEV FTMSL 1821.7	1822.3	1822.6	1822.9	1823.0	1824.5	1829.5	1832.2	1831.1	1831.1	1830.6	1830.7	1830.5	1830.3	1829.2	1827.7	1826.7
DISCH KCFS 24.0	16.0	15.0	15.0	17.5	19.5	22.0	21.5	21.0	15.4	12.7	12.7	17.0	18.0	20.0	21.5	22.0
POWER																
AVE POWER MW	181	170	170	199	222	256	257	252	185	152	152	203	215	237	253	256
PEAK POW MW	333	334	335	335	339	354	362	359	359	357	357	357	357	353	349	346
ENERGY GWH 1921.9	65.1	28.6	36.8	143.1	165.5	184.4	191.0	187.6	133.3	113.3	54.7	34.1	41.2	176.6	188.0	178.5
--OAHE--																
NAT INFLOW 2300	317	148	190	364	236	689	162	33	118	14	5	2	3	-20		40
DEPLETION 570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR 10	37	5	0	-11	-9	-11	2	2	25	13		-20	-5	-9	-7	-2
EVAPORATION 420							26	82	101	87	39	18	21	46		
REG INFLOW 14847	808	350	445	1349	1364	1867	1322	1155	937	726	342	199	262	1144	1300	1278
RELEASE 13508	464	230	256	978	1234	1309	1589	1601	1413	892	419	97	160	955	972	939
STOR CHANGE 1339	344	121	189	371	130	558	-267	-447	-476	-166	-78	103	101	189	328	339
STORAGE 14309	14653	14774	14963	15334	15464	16022	15755	15309	14832	14666	14588	14691	14793	14981	15309	15648
ELEV FTMSL 1591.2	1592.6	1593.1	1593.8	1595.3	1595.8	1597.8	1596.8	1595.2	1593.3	1592.7	1592.4	1592.8	1593.2	1593.9	1595.2	1596.4
DISCH KCFS 15.9	15.6	16.5	14.3	16.4	20.1	22.0	25.8	26.0	23.7	14.5	14.1	7.0	10.1	15.5	15.8	16.3
POWER																
AVE POWER MW	186	198	172	198	243	268	315	316	285	174	168	83	121	186	191	198
PEAK POW MW	634	636	640	647	649	660	655	646	637	634	633	635	636	640	646	653
ENERGY GWH 1974.0	66.8	33.2	37.1	142.7	180.8	193.0	234.7	234.8	205.3	129.2	60.6	14.0	23.3	138.7	141.9	138.0
--BIG BEND--																
EVAPORATION 103							6	20	25	22	10	5	5	11		
REG INFLOW 13405	464	230	256	978	1234	1309	1583	1582	1388	870	410	92	155	944	972	939
RELEASE 13405	464	230	256	978	1234	1309	1583	1582	1388	870	410	92	155	944	972	939
STORAGE 1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL 1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS 15.9	15.6	16.5	14.3	16.4	20.1	22.0	25.7	25.7	23.3	14.2	13.8	6.6	9.8	15.3	15.8	16.3
POWER																
AVE POWER MW	74	77	67	77	94	103	120	120	111	70	69	34	50	77	78	78
PEAK POW MW	517	509	509	509	509	509	509	509	517	538	538	538	538	538	538	529
ENERGY GWH 773.9	26.6	13.0	14.5	55.4	69.9	74.1	89.6	89.6	79.6	51.8	25.0	5.7	9.5	57.3	57.9	54.5
--FORT RANDALL--																
NAT INFLOW 900	122	57	73	115	140	185	74	57	42	2	2	1	1	10		19
DEPLETION 80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION 117							8	25	31	25	10	4	4	10		
REG INFLOW 14107	585	286	328	1089	1365	1482	1631	1598	1391	847	401	88	151	941	969	955
RELEASE 14107	295	152	328	1089	1365	1482	1631	1598	1536	1484	705	233	173	738	719	581
STOR CHANGE 0	291	134					0	0	-144	-637	-304	-145	-22	203	250	374
STORAGE 3124	3415	3549	3549	3549	3549	3549	3549	3549	3405	2768	2464	2319	2297	2500	2750	3124
ELEV FTMSL 1350.0	1353.6	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1353.5	1345.1	1340.4	1337.9	1337.5	1341.0	1344.8	1350.0
DISCH KCFS 10.0	9.9	11.0	18.4	18.3	22.2	24.9	26.5	26.0	25.8	24.1	23.7	16.8	10.9	12.0	11.7	10.1
POWER																
AVE POWER MW	82	93	156	155	187	210	223	219	216	194	180	124	80	89	90	81
PEAK POW MW	350	355	355	355	355	355	355	355	349	318	296	285	283	300	317	338
ENERGY GWH 1398.7	29.5	15.6	33.6	111.5	139.4	151.1	166.1	162.8	155.4	144.1	64.6	20.8	15.3	66.1	66.7	56.1
--GAVINS POINT--																
NAT INFLOW 1450	92	43	55	148	174	166	86	103	77	122	50	23	27	77	79	127
DEPLETION 114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR -1	0	-2	-14	0	-7	-5	-3	1	0	3	1	13	11	-2	1	3
EVAPORATION 38							2	7	9	8	4	2	2	4		
REG INFLOW 15404	388	193	370	1232	1513	1619	1672	1685	1609	1599	747	265	206	799	798	711
RELEASE 15404	388	193	370	1232	1513	1619	1672	1672	1583	1599	747	265	206	799	798	750
STOR CHANGE								13	26							-39
STORAGE 358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL 1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS 13.0	13.0	13.9	20.7	20.7	24.6	27.2	27.2	27.2	26.6	26.0	25.1	19.1	13.0	13.0	13.0	13.0
POWER																
AVE POWER MW	46	49	71	71	84	93	93	93	92	91	88	67	46	46	46	46
PEAK POW MW	114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH 646.0	16.4	8.2	15.4	51.4	62.7	66.8	69.0	69.3	66.6	67.8	31.7	11.3	8.8	34.3	34.3	32.0
--GAVINS POINT - SIOUX CITY--																
NAT INFLOW 1550	169	79	102	199	310	224	129	96	60	42	16	7	9	21	5	82
DEPLETION 241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																
KAF 16713	551	270	468	1411	1789	1814	1765	1735	1621	1632	758	270	212	809	791	819
KCFS	18.5	19.4	26.2	23.7	29.1	30.5	28.7	28.2	27.2	26.5	25.5	19.5	13.3	13.1	12.9	14.2
--TOTAL--																
NAT INFLOW 24601	1435	669	860	2307	3493	6073	3346	1194	1113	1032	452	211	241	651	582	943
DEPLETION 2630	76	35	46	273	705	1329	925	142	-141	-25	-112	-52	-60	-189	-198	-124
CHAN STOR 3	80	13	-14	-22	-32	-37	-1	3	55	33	1	-28	-4	-32	-6	-4
EVAPORATION 1534							94	297	371	321	143	66	76	165		
STORAGE 44542	45429	45807	46139	46741	47708	50601	51161	50184	49500	48637	48300	48199	48207	48043	48025	48269
SYSTEM POWER																
AVE POWER MW	644	650	700	776	927	1054	1134	1125	977	746	723	604	617	767	787	796
PEAK POW MW	2138	2139	2144	2153	2163	2194	2197	2185	2179	2164	2142	2132	2132	2108	2126	2138
ENERGY GWH 7629.0	231.8	109.2	151.1	559.0	689.9	758.5	843.8	837.2	703.3	555.1	260.4	101.4	118.4	570.4	585.8	553.8
DAILY GWH	15.5	15.6	16.8	18.6	22.3	25.3	27.2	27.0	23.4	17.9	17.4	14.5	14.8	18.4	18.9	19.1

INI-SUM 15MAR 22MAR 31MAR 30APR 31MAY 30JUN 31JUL 31AUG 30SEP 31OCT 15NOV 22NOV 30NOV 31DEC 31JAN 29FEB

28FEB03		2003									2004				
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	6000	242	113	145	525	925	1454	633	263	252	324	167	78	89	295	212	283
DEPLETION	114	15	7	9	73	206	171	173	-25	-91	-61	-28	-13	-15	-102	-117	-88
EVAPORATION	460							28	89	111	96	43	20	23	50		
MOD INFLOW	5426	227	106	136	452	719	1283	432	199	232	289	152	71	81	347	329	371
RELEASE	5827	149	69	89	357	461	565	584	584	429	303	147	97	127	615	646	604
STOR CHANGE	-401	78	36	47	95	258	718	-153	-385	-197	-14	5	-26	-46	-268	-317	-233
STORAGE	10922	11000	11037	11083	11178	11436	12154	12001	11616	11420	11405	11410	11384	11338	11070	10754	10521
ELEV FTMSL	2212.1	2212.6	2212.8	2213.1	2213.7	2215.2	2219.3	2218.4	2216.2	2215.1	2215.0	2215.0	2214.9	2214.6	2213.0	2211.1	2209.7
DISCH KCFS	9.0	5.0	5.0	5.0	6.0	7.5	9.5	9.5	9.5	7.2	4.9	4.9	7.0	8.0	10.0	10.5	10.5
POWER																	
AVE POWER MW		62	63	63	75	94	121	122	121	91	62	62	88	101	125	130	129
PEAK POW MW		186	186	187	187	189	195	194	191	189	189	189	189	189	187	184	182
ENERGY GWH	887.7	22.5	10.5	13.5	54.2	70.2	87.1	90.7	90.1	65.7	46.4	22.5	14.8	19.4	93.2	97.0	90.0
--GARRISON--																	
NAT INFLOW	9400	443	207	266	712	1197	2521	1765	496	417	400	164	76	87	222	165	262
DEPLETION	1276	24	11	15	58	133	547	446	93	-61	73	-49	-23	-26	-6	13	27
CHAN STOR	-16	43			-11	-16	-21			24	24	0	-22	-11	-21	-5	
EVAPORATION	536							33	104	129	112	50	23	27	57		
REG INFLOW	13399	611	265	341	1000	1509	2518	1870	883	802	542	308	151	203	764	792	839
RELEASE	13896	476	208	268	1041	1291	1398	1414	1383	926	775	375	236	286	1230	1322	1265
STOR CHANGE	-497	135	57	73	-41	218	1120	456	-500	-125	-233	-67	-85	-83	-465	-530	-426
STORAGE	13150	13285	13341	13414	13373	13591	14711	15167	14666	14542	14309	14242	14157	14074	13609	13079	12653
ELEV FTMSL	1819.5	1820.0	1820.3	1820.6	1820.4	1821.3	1825.6	1827.3	1825.4	1824.9	1824.1	1823.8	1823.5	1823.1	1821.3	1819.2	1817.5
DISCH KCFS	23.5	16.0	15.0	15.0	17.5	21.0	23.5	23.0	22.5	15.6	12.6	12.6	17.0	18.0	20.0	21.5	22.0
POWER																	
AVE POWER MW		178	167	168	195	235	267	267	261	180	145	145	194	205	226	239	241
PEAK POW MW		326	327	328	327	330	343	348	342	341	338	337	336	336	330	324	319
ENERGY GWH	1903.5	64.1	28.1	36.2	140.8	174.5	192.1	198.3	194.0	129.5	108.0	52.1	32.6	39.3	167.9	177.9	168.0
--OAHE--																	
NAT INFLOW	1449	154	72	92	229	130	577	102	24	65	9				-35	-6	36
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	6	36	5	0	-12	-17	-12	2	2	34	15		-22	-5	-10	-8	-2
EVAPORATION	474							30	93	114	98	44	20	23	51		
REG INFLOW	14307	644	275	347	1213	1343	1843	1351	1227	888	708	330	193	257	1123	1293	1274
RELEASE	14819	500	275	365	1237	1487	1431	1695	1695	1349	993	449	230	186	1135	1012	781
STOR CHANGE	-511	144	-1	-18	-24	-144	412	-344	-468	-461	-285	-119	-37	70	-12	282	493
STORAGE	13749	13893	13893	13875	13851	13707	14119	13775	13307	12846	12560	12442	12405	12475	12463	12745	13238
ELEV FTMSL	1589.0	1589.5	1589.5	1589.5	1589.4	1588.8	1590.5	1589.1	1587.1	1585.1	1583.9	1583.3	1583.2	1583.5	1583.4	1584.7	1586.8
DISCH KCFS	16.6	16.8	19.8	20.4	20.8	24.2	24.1	27.6	27.6	22.7	16.1	15.1	16.5	11.7	18.5	16.5	13.6
POWER																	
AVE POWER MW		197	232	239	243	282	282	322	319	260	184	171	187	133	209	187	156
PEAK POW MW		619	619	618	618	615	623	616	606	596	589	586	586	587	587	594	605
ENERGY GWH	2072.3	70.8	39.0	51.7	175.2	209.8	202.7	239.8	237.6	187.2	136.9	61.5	31.4	25.6	155.4	139.1	108.6
--BIG BEND--																	
EVAPORATION	129							8	24	31	27	12	6	7	14		
REG INFLOW	14690	500	275	365	1237	1487	1431	1687	1670	1318	966	436	224	180	1121	1012	781
RELEASE	14690	500	275	365	1237	1487	1431	1687	1670	1318	966	436	224	180	1121	1012	781
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	16.6	16.8	19.8	20.4	20.8	24.2	24.1	27.4	27.2	22.1	15.7	14.7	16.1	11.3	18.2	16.5	13.6
POWER																	
AVE POWER MW		80	93	96	97	113	113	128	127	105	78	74	81	57	90	80	65
PEAK POW MW		517	510	509	509	509	509	509	509	523	538	538	538	538	538	538	529
ENERGY GWH	847.5	28.6	15.6	20.7	70.1	84.2	81.1	95.5	94.6	75.7	58.1	26.6	13.7	11.0	67.0	59.6	45.4
--FORT RANDALL--																	
NAT INFLOW	500	68	32	41	64	51	130	26	49	23	1				5	-5	15
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	144							10	32	39	29	11	5	5	13		
REG INFLOW	14967	566	306	405	1297	1529	1549	1685	1673	1295	937	424	219	174	1110	1004	793
RELEASE	14967	295	171	388	1297	1529	1549	1685	1673	1610	1571	709	237	175	744	732	604
STOR CHANGE	-1	272	136	17				0	0	-315	-634	-285	-18	0	366	272	189
STORAGE	3124	3396	3532	3549	3549	3549	3549	3549	3549	3234	2600	2315	2297	2297	2663	2935	3124
ELEV FTMSL	1350.0	1353.4	1355.0	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1351.4	1342.6	1337.8	1337.5	1337.5	1343.5	1347.4	1350.0
DISCH KCFS	10.5	9.9	12.3	21.7	21.8	24.9	26.0	27.4	27.2	27.1	25.5	23.8	17.0	11.0	12.1	11.9	10.5
POWER																	
AVE POWER MW		82	104	183	184	209	219	231	229	224	201	177	124	80	91	93	85
PEAK POW MW		349	354	355	355	355	355	355	355	342	306	285	284	284	311	329	338
ENERGY GWH	1480.9	29.5	17.4	39.6	132.5	155.9	157.9	171.5	170.3	161.4	149.4	63.6	20.8	15.4	67.5	69.4	58.9
--GAVINS POINT--																	
NAT INFLOW	1251	91	43	55	124	138	143	81	80	58	105	47	22	25	70	68	101
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	1	-5	-18	0	-6	-2	-3	0	0	3	3	13	11	-2	0	3
EVAPORATION	47							3	9	11	10	5	2	2	5		
REG INFLOW	16056	388	209	425	1416	1642	1666	1722	1735	1662	1666	750	267	206	797	799	708
RELEASE	16056	388	209	425	1416	1642	1666	1722	1722	1636	1666	750	267	206	797	799	747
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	15.0	23.8	23.8	26.7	28.0	28.0	28.0	27.5	27.1	25.2	19.2	13.0	13.0	13.0	13.0
POWER																	
AVE POWER MW		46	52	82	82	91	95	95	96	95	95	88	68	46	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	672.0	16.4	8.8	17.6	58.7	67.8	68.6	70.9	71.3	68.7	70.6	31.8	11.4	8.8	34.2	34.3	31.8
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	900	115	54	69	90	174	125	75	56	35	24	13	6	7	13	-3	48
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	16715	497	260	491	1486	1782	1762	1761	1745	1649	1681	757	270	210	799	784	782
KCFS		16.7	18.7	27.5	25.0	29.0	29.6	28.6	28.4	27.7	27.3	25.5	19.5	13.2	13.0	12.8	13.6
--TOTAL--																	
NAT INFLOW	19500	1114	520	668	1744	2615	4950	2682	968	850	863	390	182	208	570	431	745
DEPLETION	2395	68	32	41	205	463	903	850	216	-105	17	-64	-30	-34	-73	-73	-20
CHAN STOR	-11	80	0	-18	-23	-39	-36	0	3	58	41	3	-31	-4	-33	-12	0
EVAPORATION	1790							112	351	435	373	165	77	87	190		
STORAGE	42985	43614	43842	43961	43991	44323	46572	46532	45191	44120	42953	42487	42321	42262	41883	41591	41574
SYSTEM POWER																	
AVE POWER MW		644	711	831	877	1025	1096	1165	1153	956	765	717	742	622	787	776	722
PEAK POW MW		2112	2111	2111	2111	2113	2139	2136	2118	2108	2078	2053	2050	2050	2031	2047	2049
ENERGY GWH	7863.9	231.9	119.5	179.4	631.5	762.4	789.5	866.8	857.7	688.3	569.4	258.1	124.7	119.5	585.2	577.3	502.7
DAILY GWH		15.5	17.1	19.9	21.0	24.6	26.3	28.0	27.7	22.9	18.4	17.2	17.8	14.9	18.9	18.6	17.3

28FEB03		2003									2004				
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	5100	234	109	140	515	783	996	439	253	242	320	159	74	85	271	205	275
DEPLETION	42	15	7	9	73	206	171	100	-52	-122	-87	-25	-11	-13	-88	-83	-58
EVAPORATION	442							27	85	106	93	42	20	22	48		
MOD INFLOW	4616	219	102	131	442	577	825	312	220	258	314	141	66	75	311	288	333
RELEASE	6002	149	69	89	357	523	565	584	584	426	301	146	97	127	615	707	661
STOR CHANGE	-1386	70	33	42	85	54	260	-272	-364	-168	13	-5	-31	-52	-304	-419	-328
STORAGE	10922	10992	11025	11067	11152	11207	11466	11194	10830	10662	10675	10670	10639	10587	10283	9864	9536
ELEV FTMSL	2212.1	2212.6	2212.8	2213.0	2213.5	2213.8	2215.3	2213.8	2211.6	2210.6	2210.7	2210.6	2210.4	2210.1	2208.3	2205.7	2203.6
DISCH KCFS	9.0	5.0	5.0	5.0	6.0	8.5	9.5	9.5	9.5	7.2	4.9	4.9	7.0	8.0	10.0	11.5	11.5
POWER																	
AVE POWER MW		62	63	63	75	106	119	119	118	89	61	61	86	99	122	139	137
PEAK POW MW		186	186	187	187	188	190	188	185	183	183	183	183	183	180	177	174
ENERGY GWH	897.3	22.5	10.5	13.5	54.1	79.2	86.0	88.9	88.1	63.9	45.1	21.8	14.5	18.9	91.1	103.5	95.6
--GARRISON--																	
NAT INFLOW	7299	270	126	162	700	903	2020	1277	361	277	390	161	75	86	108	160	223
DEPLETION	1115	24	11	15	58	133	547	361	64	-64	66	-53	-25	-28	-12	4	14
CHAN STOR	-27	43			-11	-27	-11			25	24		-23	-11	-21	-16	
EVAPORATION	512							32	99	124	107	48	22	25	55		
REG INFLOW	11646	437	184	237	988	1266	2028	1469	782	668	542	312	152	205	659	847	870
RELEASE	13319	476	208	268	952	1138	1279	1291	1261	926	775	375	236	286	1230	1353	1265
STOR CHANGE	-1673	-39	-24	-31	36	128	748	177	-479	-258	-233	-63	-84	-81	-571	-506	-395
STORAGE	13150	13111	13087	13056	13092	13221	13969	14146	13667	13409	13177	13113	13029	12949	12378	11872	11477
ELEV FTMSL	1819.5	1819.3	1819.2	1819.1	1819.3	1819.8	1822.7	1823.4	1821.6	1820.5	1819.6	1819.3	1819.0	1818.7	1816.3	1814.2	1812.5
DISCH KCFS	23.5	16.0	15.0	15.0	16.0	18.5	21.5	21.0	20.5	15.6	12.6	12.6	17.0	18.0	20.0	22.0	22.0
POWER																	
AVE POWER MW		178	167	166	177	205	241	238	232	175	141	140	188	199	218	236	233
PEAK POW MW		324	324	324	324	326	334	336	331	328	325	324	323	322	316	309	304
ENERGY GWH	1782.6	63.9	28.0	35.9	127.7	152.6	173.4	177.2	172.4	125.9	104.8	50.5	31.6	38.2	162.5	175.7	162.1
--OAHE--																	
NAT INFLOW	1049	197	92	118	183	100	215	82	21	64	5	-5	-2	-3	-48	-12	41
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	5	36	5	0	-5	-12	-15	2	2	25	15		-23	-5	-11	-10	
EVAPORATION	440							29	88	107	91	40	19	21	47		
REG INFLOW	13363	688	295	373	1085	1164	1360	1209	1106	886	712	328	191	256	1114	1315	1281
RELEASE	15077	501	297	375	1262	1510	1446	1713	1712	1385	1047	453	232	189	983	997	975
STOR CHANGE	-1714	186	-2	-2	-177	-346	-87	-504	-605	-499	-335	-125	-41	66	131	318	307
STORAGE	13749	13935	13933	13930	13754	13408	13321	12817	12212	11713	11378	11253	11212	11279	11409	11728	12035
ELEV FTMSL	1589.0	1589.7	1589.7	1589.7	1589.0	1587.5	1587.2	1585.0	1582.3	1580.0	1578.4	1577.8	1577.6	1577.9	1578.6	1580.1	1581.5
DISCH KCFS	16.6	16.9	21.4	21.0	21.2	24.6	24.3	27.9	27.8	23.3	17.0	15.2	16.7	11.9	16.0	16.2	16.9
POWER																	
AVE POWER MW		197	251	246	248	285	281	319	314	259	188	167	182	131	175	179	189
PEAK POW MW		620	620	619	616	608	607	595	581	569	560	557	556	558	561	569	577
ENERGY GWH	2067.4	71.1	42.2	53.2	178.6	212.1	202.1	237.3	233.8	186.6	139.7	60.1	30.7	25.1	130.4	133.2	131.4
--BIG BEND--																	
EVAPORATION	129							8	24	31	27	12	6	7	14		
REG INFLOW	14948	501	297	375	1262	1510	1446	1705	1687	1354	1020	441	226	183	969	997	975
RELEASE	14948	501	297	375	1262	1510	1446	1705	1687	1354	1020	441	226	183	969	997	975
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	16.6	16.9	21.4	21.0	21.2	24.6	24.3	27.7	27.4	22.8	16.6	14.8	16.3	11.5	15.8	16.2	16.9
POWER																	
AVE POWER MW		80	100	98	99	115	114	130	128	108	82	75	82	58	79	80	81
PEAK POW MW		518	510	509	509	509	509	509	509	523	538	538	538	538	538	538	529
ENERGY GWH	863.5	28.7	16.9	21.3	71.5	85.5	81.9	96.6	95.6	77.8	61.3	26.9	13.8	11.2	58.8	59.3	56.6
--FORT RANDALL--																	
NAT INFLOW	300	55	26	33	43	35	120	13	36	-10	-52	-3	-1	-1		-6	12
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	143							10	32	39	29	11	5	5	12		
REG INFLOW	15025	555	322	408	1301	1536	1554	1690	1677	1298	937	426	220	176	953	988	984
RELEASE	15026	298	172	391	1301	1536	1554	1690	1677	1613	1572	711	237	176	750	738	610
STOR CHANGE	-1	258	150	17				0	0	-315	-634	-285	-18	0	203	250	374
STORAGE	3124	3382	3532	3549	3549	3549	3549	3549	3549	3234	2600	2315	2297	2297	2500	2750	3124
ELEV FTMSL	1350.0	1353.2	1355.0	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1351.4	1342.6	1337.8	1337.5	1337.5	1341.0	1344.8	1350.0
DISCH KCFS	10.5	10.0	12.4	21.9	21.9	25.0	26.1	27.5	27.3	27.1	25.6	23.9	17.1	11.1	12.2	12.0	10.6
POWER																	
AVE POWER MW		83	105	185	185	210	220	231	229	225	201	177	124	81	90	92	85
PEAK POW MW		348	354	355	355	355	355	355	355	342	306	285	284	284	300	317	338
ENERGY GWH	1483.5	29.8	17.6	39.9	132.9	156.6	158.4	172.0	170.7	161.7	149.4	63.7	20.9	15.5	67.2	68.4	58.8
--GAVINS POINT--																	
NAT INFLOW	1200	87	41	52	120	131	138	76	76	55	104	45	21	24	67	65	98
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	1	-5	-18	0	-6	-2	-3	0	0	3	3	13	11	-2	0	3
EVAPORATION	47							3	9	11	10	5	2	2	5		
REG INFLOW	16064	386	209	425	1416	1642	1666	1722	1735	1662	1666	750	267	206	800	802	710
RELEASE	16064	386	209	425	1416	1642	1666	1722	1722	1636	1666	750	267	206	800	802	749
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	15.0	23.8	23.8	26.7	28.0	28.0	28.0	27.5	27.1	25.2	19.2	13.0	13.0	13.0	13.0
POWER																	
AVE POWER MW		45	52	82	82	91	95	95	96	95	95	88	68	46	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	672.3	16.3	8.8	17.6	58.7	67.8	68.6	70.9	71.3	68.7	70.6	31.8	11.4	8.9	34.4	34.5	32.0
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	550	36	17	22	77	144	106	47	22	15	14	10	4	5	10	-5	26
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	16373	417	223	443	1473	1752	1743	1733	1711	1629	1671	754	269	209	799	785	762
KCFS		14.0	16.0	24.8	24.8	28.5	29.3	28.2	27.8	27.4	27.2	25.4	19.4	13.1	13.0	12.8	13.3
--TOTAL--																	
NAT INFLOW	15498	880	411	528	1638	2096	3595	1934	769	643	781	367	171	195	408	407	675
DEPLETION	2162	68	32	41	205	463	903	692	160	-139	-16	-65	-30	-35	-65	-48	-3
CHAN STOR	-23	80	0	-18	-15	-45	-27	0	3	50	42	3	-33	-4	-34	-26	3
EVAPORATION	1714							108	337	417	357	158	73	83	181		
STORAGE	42985	43461	43617	43643	43587	43424	44345	43746	42311	41097	39908	39430	39256	39190	38649	38292	38211
SYSTEM POWER																	
AVE POWER MW		645	737	840	866	1013	1070	1133	1118	951	768	708	731	613	732	772	771
PEAK POW MW		2111	2109	2108	2106	2100	2109	2097	2076	2063	2030	2005	2001	2002	1973	1989	1998
ENERGY GWH	7766.7	232.3	123.9	181.5	623.6	753.8	770.4	842.9	831.7	684.6	571.1	255.0	122.9	117.8	544.4	574.5	536.5
DAILY GWH		15.5	17.7	20.2	20.8	24.3	25.7	27.2	26.8	22.8	18.4	17.0	17.6	14.7	17.6	18.5	18.5

INI-SUM 15MAR 22MAR 31MAR 30APR 31MAY 30JUN 31JUL 31AUG 30SEP 31OCT 15NOV 22NOV 30NOV 31DEC 31JAN 29FEB

28FEB03		2003										2004			
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	9600	319	149	192	797	1604	2491	1219	456	379	531	210	98	112	346	297	400
DEPLETION	268	-31	-15	-19	69	291	489	164	-96	-105	-51	-20	-9	-11	-116	-150	-122
EVAPORATION	320							21	66	84	74	18	8	10	39		
MOD INFLOW	9012	351	164	210	728	1313	2002	1034	486	400	508	212	99	113	423	447	522
RELEASE	5015	179	69	89	298	369	506	523	523	357	280	119	56	127	510	523	489
STOR CHANGE	3997	172	94	121	430	944	1496	512	-37	43	228	93	43	-14	-87	-76	33
STORAGE	11877	12049	12143	12265	12695	13639	15135	15647	15610	15653	15881	15974	16018	16004	15917	15841	15874
ELEV FTMSL	2217.7	2218.7	2219.2	2219.9	2222.3	2227.3	2234.7	2237.0	2236.9	2237.0	2238.1	2238.5	2238.7	2238.6	2238.2	2237.9	2238.1
DISCH KCFS	12.0	6.0	5.0	5.0	5.0	6.0	8.5	8.5	8.5	6.0	4.6	4.0	4.0	8.0	8.3	8.5	8.5
POWER																	
AVE POWER MW		77	64	65	65	79	114	116	117	82	63	55	55	110	114	117	117
PEAK POW MW		194	195	196	198	203	209	211	210	211	211	212	212	212	211	211	211
ENERGY GWH	823.9	27.7	10.8	14.0	46.8	59.0	82.4	86.5	86.8	59.3	46.7	19.9	9.3	21.2	85.1	87.1	81.4
--GARRISON--																	
NAT INFLOW	14199	515	240	309	1376	1934	3530	2647	841	574	652	260	121	139	278	348	434
DEPLETION	1213	33	16	20	9	268	919	545	53	-121	-3	-98	-46	-52	-132	-116	-83
CHAN STOR	37	63	10			-10	-26	0		25	14	5	0	-39	-3	-2	0
EVAPORATION	350							23	74	93	81	19	9	10	42		
REG INFLOW	17689	724	305	378	1665	2025	3091	2602	1237	984	869	463	213	268	876	985	1006
RELEASE	14749	476	222	286	1131	1291	1428	1414	1353	1131	1043	452	211	286	1230	1445	1352
STOR CHANGE	2940	248	83	93	534	733	1663	1188	-116	-147	-174	11	3	-18	-354	-460	-346
STORAGE	14315	14562	14645	14738	15272	16005	17668	18856	18740	18593	18419	18430	18433	18415	18061	17601	17255
ELEV FTMSL	1824.1	1825.0	1825.3	1825.7	1827.7	1830.3	1836.0	1839.9	1839.5	1839.0	1838.5	1838.5	1838.5	1838.5	1837.3	1835.8	1834.7
DISCH KCFS	25.0	16.0	16.0	16.0	19.0	21.0	24.0	23.0	22.0	19.0	17.0	15.2	15.2	18.0	20.0	23.5	23.5
POWER																	
AVE POWER MW		184	185	185	221	248	291	287	278	240	213	191	191	226	250	291	288
PEAK POW MW		341	342	343	349	357	373	385	383	382	380	381	381	380	377	373	369
ENERGY GWH	2188.6	66.2	31.0	40.0	159.2	184.4	209.2	213.6	206.5	172.5	158.8	68.7	32.1	43.4	186.0	216.3	200.7
--OAHE--																	
NAT INFLOW	3850	559	261	335	474	347	881	297	123	163	102	109	51	58	22	10	59
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	9	41			-13	-8	-12	4	4	12	8	7		-12	-8	-14	
EVAPORATION	339							23	72	89	77	18	9	10	41		
REG INFLOW	17699	1054	473	608	1547	1568	2177	1554	1318	1194	1083	548	252	322	1192	1426	1386
RELEASE	13801	381	197	229	765	978	906	1634	1806	1574	1094	526	243	233	1261	1129	843
STOR CHANGE	3898	672	276	378	781	590	1270	-80	-488	-380	-11	22	9	88	-69	296	543
STORAGE	14944	15616	15892	16270	17051	17642	18912	18832	18344	17963	17952	17974	17983	18072	18002	18299	18842
ELEV FTMSL	1593.8	1596.3	1597.4	1598.7	1601.5	1603.6	1607.7	1607.5	1605.9	1604.6	1604.6	1604.7	1604.7	1605.0	1604.8	1605.8	1607.5
DISCH KCFS	15.2	12.8	14.2	12.9	12.9	15.9	15.2	26.6	29.4	26.5	17.8	17.7	17.5	14.7	20.5	18.4	14.6
POWER																	
AVE POWER MW		155	173	158	160	200	195	343	377	337	227	225	223	188	262	235	189
PEAK POW MW		652	657	664	679	690	712	710	702	695	695	695	696	697	696	701	711
ENERGY GWH	2127.7	55.9	29.1	34.2	115.4	149.2	140.7	255.4	280.6	242.9	168.8	81.1	37.5	36.1	194.6	174.8	131.5
--BIG BEND--																	
EVAPORATION	71							5	15	19	16	4	2	2	9		
REG INFLOW	13730	381	197	229	765	978	906	1629	1791	1555	1078	522	241	231	1253	1129	843
RELEASE	13730	381	197	229	765	978	906	1629	1791	1555	1078	522	241	231	1253	1129	843
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	15.2	12.8	14.2	12.9	12.9	15.9	15.2	26.5	29.1	26.1	17.5	17.5	17.4	14.6	20.4	18.4	14.6
POWER																	
AVE POWER MW		61	66	60	60	74	71	124	136	124	86	88	87	73	101	89	70
PEAK POW MW		517	509	509	509	509	509	509	509	517	538	538	538	538	538	538	529
ENERGY GWH	793.7	21.9	11.1	13.0	43.4	55.4	51.4	92.3	101.4	89.2	64.0	31.7	14.7	14.1	74.8	66.5	48.9
--FORT RANDALL--																	
NAT INFLOW	1501	190	89	114	298	159	224	111	72	92	60	5	2	3	23	10	49
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	82							6	19	24	19	4	2	2	8		
REG INFLOW	15070	570	285	343	1059	1128	1118	1716	1829	1617	1118	522	242	232	1265	1136	889
RELEASE	15070	280	151	343	1059	1128	1118	1716	1829	1761	1743	836	390	254	899	879	685
STOR CHANGE	0	291	134					0	0	-144	-624	-313	-149	-22	366	257	204
STORAGE	3124	3415	3549	3549	3549	3549	3549	3549	3549	3405	2781	2468	2319	2297	2663	2920	3124
ELEV FTMSL	1350.0	1353.6	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1353.5	1345.3	1340.4	1337.9	1337.5	1343.5	1347.2	1350.0
DISCH KCFS	9.5	9.4	10.9	19.2	17.8	18.3	18.8	27.9	29.8	29.6	28.3	28.1	28.1	16.0	14.6	14.3	11.9
POWER																	
AVE POWER MW		78	92	162	151	155	159	235	250	247	227	212	206	116	109	112	96
PEAK POW MW		350	355	355	355	355	355	355	355	349	319	297	285	284	312	328	338
ENERGY GWH	1488.8	28.0	15.4	35.1	108.5	115.5	114.5	174.7	185.9	177.8	168.9	76.5	34.5	22.4	81.4	83.1	66.7
--GAVINS POINT--																	
NAT INFLOW	2252	107	50	64	246	319	281	211	170	135	157	60	28	32	95	106	191
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-6	0	-3	-16	3	-1	-1	-17	-4	0	2	0	0	22	3	1	4
EVAPORATION	26							2	5	7	6	1	1	1	3		
REG INFLOW	17176	387	198	391	1303	1427	1375	1869	1981	1894	1894	890	415	305	983	985	880
RELEASE	17176	387	198	391	1303	1427	1375	1869	1968	1868	1894	890	415	305	983	985	919
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	14.3	21.9	21.9	23.2	23.1	30.4	32.0	31.4	30.8	29.9	29.9	19.2	16.0	16.0	16.0
POWER																	
AVE POWER MW		46	50	75	75	80	79	102	106	106	106	103	103	68	57	57	56
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	712.1	16.4	8.4	16.3	54.2	59.2	57.1	75.8	78.9	76.3	78.5	37.2	17.4	13.0	42.1	42.2	39.1
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	3100	195	91	117	1006	553	318	246	184	127	66	26	12	14	30	12	105
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	20035	576	286	504	2289	1946	1664	2079	2119	1973	1951	910	425	316	1002	985	1011
KCFS		19.4	20.6	28.2	38.5	31.6	28.0	33.8	34.5	33.2	31.7	30.6	30.6	19.9	16.3	16.0	17.6
--TOTAL--																	
NAT INFLOW	34502	1885	879	1131	4197	4916	7725	4731	1846	1470	1568	670	312	357	794	783	1238
DEPLETION	2486	30	14	18	152	683	1593	940	105	-179	-49	-105	-49	-56	-213	-235	-164
CHAN STOR	41	104	8	-16	-10	-20	-39	-14	0	37	25	13	0	-28	-9	-16	4
EVAPORATION	1186							79	251	315	272	64	30	34	141		
STORAGE	46300	47683	48269	48861	50607	52874	57304	58923	58295	57693	57112	56925	56832	56867	56722	56740	57135
SYSTEM POWER																	
AVE POWER MW		600	630	706	733	837	910	1207	1264	1136	922	875	866	782	892	900	816
PEAK POW MW		2168	2172	2181	2204	2228	2272	2284	2275	2271	2261	2239	2228	2228	2212	2229	2234
ENERGY GWH	8134.8	216.1	105.9	152.5	527.5	622.6	655.3	898.1	940.1	818.1	685.7	315.2	145.5	150.1	664.0	669.9	568.3
DAILY GWH		14.4	15.1	16.9	17.6	20.1	21.8	29.0	30.3	27.3	22.1	21.0	20.8	18.8	21.4	21.6	19.6

VALUES IN 1000 AF EXCEPT AS INDICATED

	28FEB03	2003											2004			
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	8901	296	138	178	739	1487	2309	1130	423	351	492	195	91	104	321	276	371
DEPLETION	215	-31	-15	-19	69	291	489	139	-95	-105	-73	-27	-12	-14	-125	-150	-107
EVAPORATION	343							20	65	82	72	33	15	18	38		
MOD INFLOW	8343	328	153	196	670	1196	1820	971	453	374	493	189	88	101	408	426	478
RELEASE	5046	179	69	89	298	369	506	523	523	326	279	135	63	95	523	553	518
STOR CHANGE	3297	149	83	107	372	827	1314	448	-70	48	214	54	25	5	-115	-127	-40
STORAGE	11877	12026	12109	12217	12589	13416	14730	15178	15109	15157	15371	15425	15450	15455	15341	15213	15174
ELEV FTMSL	2217.7	2218.5	2219.0	2219.6	2221.7	2226.1	2232.7	2234.9	2234.5	2234.8	2235.8	2236.0	2236.1	2236.1	2235.6	2235.0	2234.8
DISCH KCFS	12.0	6.0	5.0	5.0	5.0	6.0	8.5	8.5	8.5	5.5	4.5	4.5	4.5	6.0	8.5	9.0	9.0
POWER																	
AVE POWER MW		77	64	65	65	79	114	115	116	75	62	62	62	82	116	123	123
PEAK POW MW		194	195	195	198	202	207	209	209	209	210	210	210	210	209	209	209
ENERGY GWH	823.9	27.7	10.8	13.9	46.7	58.8	82.0	85.9	86.2	53.8	46.1	22.4	10.4	15.8	86.5	91.4	85.4
--GARRISON--																	
NAT INFLOW	12901	482	225	289	1250	1723	3207	2405	764	522	593	236	110	126	260	316	394
DEPLETION	1206	34	16	20	9	310	907	514	51	-121	-2	-94	-44	-50	-138	-120	-87
CHAN STOR	32	63	10			-10	-26	0		30	9			-15	-25	-5	
EVAPORATION	367							22	71	88	77	35	16	19	40		
REG INFLOW	16406	689	289	358	1539	1772	2780	2392	1165	911	806	430	201	238	856	984	999
RELEASE	14246	476	215	277	1101	1261	1369	1383	1353	1070	871	421	197	286	1230	1414	1323
STOR CHANGE	2161	213	74	81	438	511	1411	1008	-188	-159	-65	8	4	-48	-374	-430	-324
STORAGE	14315	14528	14601	14683	15120	15631	17043	18051	17863	17704	17639	17648	17651	17604	17230	16800	16476
ELEV FTMSL	1824.1	1824.9	1825.2	1825.5	1827.1	1829.0	1833.9	1837.3	1836.7	1836.2	1836.0	1836.0	1836.0	1835.8	1834.6	1833.1	1832.0
DISCH KCFS	25.0	16.0	15.5	15.5	18.5	20.5	23.0	22.5	22.0	18.0	14.2	14.2	14.2	18.0	20.0	23.0	23.0
POWER																	
AVE POWER MW		184	179	179	215	240	275	277	273	223	176	176	176	222	246	280	277
PEAK POW MW		341	341	342	347	353	367	377	375	374	373	373	373	373	369	365	361
ENERGY GWH	2086.8	66.2	30.0	38.7	154.7	178.9	198.4	206.0	203.2	160.5	130.7	63.2	29.5	42.7	182.9	208.1	193.1
--OAHE--																	
NAT INFLOW	3200	460	214	276	394	285	749	246	103	135	85	91	42	48	18	5	49
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	10	41	2		-13	-9	-11	2	2	17	16	0		-16	-9	-13	
EVAPORATION	354							22	69	85	73	33	15	18	38		
REG INFLOW	16532	955	422	539	1437	1475	1987	1472	1299	1114	906	477	223	299	1190	1392	1347
RELEASE	13462	562	108	265	858	1037	967	1600	1753	1540	1050	508	235	212	1087	948	734
STOR CHANGE	3070	393	313	275	579	438	1020	-129	-454	-426	-144	-31	-12	87	103	443	613
STORAGE	14944	15337	15650	15925	16504	16942	17962	17834	17380	16954	16810	16779	16767	16855	16958	17401	18014
ELEV FTMSL	1593.8	1595.3	1596.5	1597.5	1599.6	1601.1	1604.6	1604.2	1602.7	1601.2	1600.7	1600.6	1600.5	1600.8	1601.2	1602.7	1604.8
DISCH KCFS	15.2	18.9	7.8	14.8	14.4	16.9	16.3	26.0	28.5	25.9	17.1	17.1	16.9	13.3	17.7	15.4	12.8
POWER																	
AVE POWER MW		227	95	181	178	210	205	330	360	324	213	213	211	167	221	194	162
PEAK POW MW		647	653	658	669	677	695	693	685	677	674	674	673	675	677	685	696
ENERGY GWH	2040.3	81.9	16.0	39.2	128.1	156.3	147.8	245.8	267.6	233.3	158.7	76.7	35.5	32.0	164.3	144.3	113.0
--BIG BEND--																	
EVAPORATION	78							5	15	19	16	7	3	4	9		
REG INFLOW	13385	562	108	265	858	1037	967	1595	1738	1521	1033	501	232	208	1078	948	734
RELEASE	13385	562	108	265	858	1037	967	1595	1738	1521	1033	501	232	208	1078	948	734
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	15.2	18.9	7.8	14.8	14.4	16.9	16.3	25.9	28.3	25.6	16.8	16.8	16.7	13.1	17.5	15.4	12.8
POWER																	
AVE POWER MW		89	37	69	68	79	76	121	132	121	83	85	84	66	87	75	61
PEAK POW MW		510	509	509	509	509	509	509	509	517	538	538	538	538	538	538	529
ENERGY GWH	772.8	31.9	6.1	15.0	48.6	58.7	54.8	90.4	98.4	87.2	61.4	30.4	14.1	12.7	64.5	56.0	42.7
--FORT RANDALL--																	
NAT INFLOW	1200	142	66	85	239	150	195	89	65	64	38	3	1	1	18	5	39
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	88							6	19	24	19	7	3	3	8		
REG INFLOW	14417	702	174	349	1093	1178	1150	1660	1769	1554	1052	495	229	205	1085	950	770
RELEASE	14418	295	157	349	1093	1178	1150	1660	1769	1699	1682	805	376	227	719	713	546
STOR CHANGE	0	408	17	0	0			0	0	-144	-630	-310	-147	-22	366	237	224
STORAGE	3124	3532	3549	3549	3549	3549	3549	3549	3549	3405	2775	2465	2319	2297	2663	2900	3124
ELEV FTMSL	1350.0	1355.0	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1353.5	1345.2	1340.4	1337.9	1337.5	1343.5	1347.0	1350.0
DISCH KCFS	9.5	9.9	11.3	19.5	18.4	19.2	19.3	27.0	28.8	28.5	27.3	27.0	27.1	14.3	11.7	11.6	9.5
POWER																	
AVE POWER MW		82	96	165	155	162	163	227	242	238	219	205	198	104	88	91	77
PEAK POW MW		354	355	355	355	355	355	355	355	349	318	297	285	284	311	327	338
ENERGY GWH	1428.3	29.7	16.1	35.7	111.9	120.5	117.7	169.1	179.9	171.6	163.0	73.7	33.3	20.1	65.3	67.5	53.3
--GAVINS POINT--																	
NAT INFLOW	1899	93	44	56	207	257	237	178	144	114	132	51	24	27	86	89	161
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	-1	-3	-16	2	-2	0	-15	-3	0	2	1	0	24	5	0	4
EVAPORATION	28							2	5	7	6	3	1	1	3		
REG INFLOW	16173	388	198	389	1297	1414	1363	1783	1895	1811	1808	848	396	274	797	801	711
RELEASE	16173	388	198	389	1297	1414	1363	1783	1882	1785	1808	848	396	274	797	801	750
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	14.3	21.8	21.8	23.0	22.9	29.0	30.6	30.0	29.4	28.5	28.5	17.3	13.0	13.0	13.0
POWER																	
AVE POWER MW		46	50	75	75	79	79	99	103	103	102	100	100	61	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	675.1	16.4	8.4	16.2	54.0	58.7	56.6	73.3	76.5	74.0	76.0	35.9	16.7	11.7	34.2	34.4	32.0
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	2500	181	85	109	811	406	252	199	148	97	53	21	10	11	24	10	84
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	18432	563	280	495	2088	1786	1586	1946	1997	1860	1852	863	403	282	810	799	821
KCFS		18.9	20.2	27.7	35.1	29.0	26.6	31.7	32.5	31.3	30.1	29.0	29.0	17.8	13.2	13.0	14.3
--TOTAL--																	
NAT INFLOW	30601	1654	772	992	3640	4308	6949	4247	1647	1283	1393	595	278	317	727	701	1098
DEPLETION	2426	31	14	19	152	725	1581	884	104	-179	-70	-108	-50	-57	-228	-239	-153
CHAN STOR	42	103	10	-16	-11	-21	-37	-13	-1	47	28	1	0	-7	-29	-18	4
EVAPORATION	1258							76	243	304	263	118	55	62	136		
STORAGE	46300	47463	47950	48413	49802	51578	55324	56652	55954	55299	54675	54396	54266	54290	54270	54393	54827
SYSTEM POWER																	
AVE POWER MW		705	521	735	756	849	913	1170	1225	1084	855	839	831	703	803	809	746
PEAK POW MW		2161	2167	2174	2192	2210	2248	2257	2248	2243	2230	2208	2197	2196	2183	2202	2209
ENERGY GWH	7827.2	253.8	87.5	158.7	544.0	632.0	657.3	870.4	911.8	780.4	636.0	302.2	139.5	134.9	597.6	601.7	519.4
DAILY GWH		16.9	12.5	17.6	18.1	20.4	21.9	28.1	29.4	26.0	20.5	20.1	19.9	16.9	19.3	19.4	17.9

INI-SUM 15MAR 22MAR 31MAR 30APR 31MAY 30JUN 31JUL 31AUG 30SEP 31OCT 15NOV 22NOV 30NOV 31DEC 31JAN 29FEB

	28FEB03	2003											2004			
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	7400	264	123	158	628	1210	1851	829	324	319	398	188	88	100	310	261	349
DEPLETION	122	-3	-1	-2	70	304	316	138	-87	-99	-64	-33	-15	-17	-122	-149	-114
EVAPORATION	399							24	76	96	84	38	18	20	44		
MOD INFLOW	6879	267	125	160	558	906	1535	667	335	322	378	182	85	97	388	410	463
RELEASE	5678	179	69	89	357	430	536	553	553	397	308	149	97	127	615	615	604
STOR CHANGE	1200	89	55	71	201	476	999	113	-219	-75	71	33	-12	-30	-227	-205	-141
STORAGE	11372	11461	11516	11587	11788	12263	13263	13376	13157	13083	13153	13186	13174	13144	12918	12713	12572
ELEV FTMSL	2214.8	2215.3	2215.6	2216.0	2217.2	2219.9	2225.3	2225.9	2224.8	2224.4	2224.7	2224.9	2224.8	2224.7	2223.5	2222.4	2221.6
DISCH KCFS	10.0	6.0	5.0	5.0	6.0	7.0	9.0	9.0	9.0	6.7	5.0	5.0	7.0	8.0	10.0	10.0	10.5
POWER																	
AVE POWER MW		76	63	63	76	90	118	119	119	88	66	66	92	106	131	131	137
PEAK POW MW		190	190	191	192	196	201	202	201	200	201	201	201	201	200	198	198
ENERGY GWH	897.4	27.3	10.6	13.7	55.0	66.9	84.6	88.6	88.5	63.4	49.2	23.8	15.5	20.3	97.7	97.2	95.1
--GARRISON--																	
NAT INFLOW	11001	469	219	282	853	1423	2958	2066	581	497	454	192	89	102	253	237	326
DEPLETION	1503	50	23	30	129	277	828	556	81	-89	34	-92	-43	-49	-102	-80	-51
CHAN STOR	-5	42	11		-11	-11	-21			24	17	0	-20	-10	-20		-5
EVAPORATION	459							28	88	110	96	44	20	23	50		
REG INFLOW	14713	640	276	341	1070	1566	2645	2036	966	896	648	389	189	245	899	932	976
RELEASE	13243	476	208	268	1041	1168	1279	1291	1261	898	763	369	236	286	1230	1261	1208
STOR CHANGE	1470	164	67	73	29	398	1365	745	-295	-2	-115	20	-47	-41	-330	-329	-232
STORAGE	13697	13861	13928	14001	14030	14428	15793	16538	16243	16241	16127	16146	16099	16058	15728	15399	15167
ELEV FTMSL	1821.7	1822.3	1822.6	1822.9	1823.0	1824.5	1829.6	1832.2	1831.2	1831.1	1830.7	1830.8	1830.6	1830.5	1829.3	1828.1	1827.3
DISCH KCFS	24.0	16.0	15.0	15.0	17.5	19.0	21.5	21.0	20.5	15.1	12.4	12.4	17.0	18.0	20.0	20.5	21.0
POWER																	
AVE POWER MW		181	170	170	199	217	250	251	246	181	149	149	203	215	238	242	246
PEAK POW MW		333	334	335	335	340	354	362	359	359	358	358	357	357	354	350	348
ENERGY GWH	1883.2	65.1	28.6	36.8	143.1	161.3	180.3	186.7	183.2	130.5	111.0	53.6	34.2	41.3	176.8	179.7	171.0
--OAHE--																	
NAT INFLOW	2300	317	148	190	364	236	689	162	33	118	14	5	2	3	-20		40
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	14	37	5	0	-11	-7	-11	2	2	24	12	0	-21	-5	-9	-2	-2
EVAPORATION	428							27	84	103	88	40	19	21	46		
REG INFLOW	14559	808	350	445	1349	1336	1837	1290	1122	914	708	333	198	262	1143	1243	1221
RELEASE	13050	464	230	256	978	1069	988	1523	1629	1436	917	431	102	160	955	972	939
STOR CHANGE	1509	344	121	189	371	266	849	-233	-507	-522	-209	-98	96	101	188	271	282
STORAGE	14309	14653	14774	14963	15334	15600	16449	16216	15710	15187	14978	14880	14976	15077	15265	15536	15818
ELEV FTMSL	1591.2	1592.6	1593.1	1593.8	1595.3	1596.3	1599.4	1598.5	1596.7	1594.7	1593.9	1593.5	1593.9	1594.3	1595.0	1596.0	1597.1
DISCH KCFS	15.9	15.6	16.5	14.3	16.4	17.4	16.6	24.8	26.5	24.1	14.9	14.5	7.4	10.1	15.5	15.8	16.3
POWER																	
AVE POWER MW		186	198	172	198	211	204	305	324	292	180	174	89	122	188	192	199
PEAK POW MW		634	636	640	647	652	668	663	654	644	640	638	640	642	646	651	656
ENERGY GWH	1917.6	66.8	33.2	37.1	142.7	157.0	146.9	227.2	240.9	210.4	133.7	62.7	14.9	23.4	139.5	142.7	138.6
--BIG BEND--																	
EVAPORATION	103							6	20	25	22	10	5	5	11		
REG INFLOW	12947	464	230	256	978	1069	988	1517	1609	1412	895	422	98	155	944	972	939
RELEASE	12947	464	230	256	978	1069	988	1517	1609	1412	895	422	98	155	944	972	939
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	15.9	15.6	16.5	14.3	16.4	17.4	16.6	24.7	26.2	23.7	14.6	14.2	7.0	9.8	15.3	15.8	16.3
POWER																	
AVE POWER MW		74	77	67	77	81	78	116	122	112	72	71	36	50	77	78	78
PEAK POW MW		517	509	509	509	509	509	509	509	517	538	538	538	538	538	538	529
ENERGY GWH	748.2	26.6	13.0	14.5	55.4	60.6	56.0	85.9	91.1	81.0	53.3	25.7	6.0	9.5	57.3	57.9	54.5
--FORT RANDALL--																	
NAT INFLOW	900	122	57	73	115	140	185	74	57	42	2	2	1	1	10		19
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	117							8	25	31	25	10	4	4	10		
REG INFLOW	13649	585	286	328	1089	1200	1161	1565	1626	1415	871	413	94	151	941	969	955
RELEASE	13650	295	152	328	1089	1200	1161	1565	1626	1559	1508	717	239	173	738	719	581
STOR CHANGE	0	291	134		0	0		0	0	-144	-637	-304	-145	-22	203	250	374
STORAGE	3124	3415	3549	3549	3549	3549	3549	3549	3549	3405	2768	2464	2319	2297	2500	2750	3124
ELEV FTMSL	1350.0	1353.6	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1353.5	1345.1	1340.4	1337.9	1337.5	1341.0	1344.8	1350.0
DISCH KCFS	10.0	9.9	11.0	18.4	18.3	19.5	19.5	25.5	26.4	26.2	24.5	24.1	17.2	10.9	12.0	11.7	10.1
POWER																	
AVE POWER MW		82	93	156	155	165	165	214	223	219	197	182	127	80	89	90	81
PEAK POW MW		350	355	355	355	355	355	355	355	349	318	296	285	283	300	317	338
ENERGY GWH	1352.2	29.5	15.6	33.6	111.5	122.8	118.8	159.5	165.6	157.7	146.4	65.7	21.3	15.3	66.1	66.7	56.1
--GAVINS POINT--																	
NAT INFLOW	1450	92	43	55	148	174	166	86	103	77	122	50	23	27	77	79	127
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	0	-2	-14	0	-2	0	-11	-2	0	3	1	13	12	-2	1	3
EVAPORATION	38							2	7	9	8	4	2	2	4		
REG INFLOW	14947	388	193	370	1232	1353	1303	1599	1710	1633	1623	759	271	207	799	798	711
RELEASE	14947	388	193	370	1232	1353	1303	1599	1697	1607	1623	759	271	207	799	798	750
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	13.9	20.7	20.7	22.0	21.9	26.0	27.6	27.0	26.4	25.5	19.5	13.0	13.0	13.0	13.0
POWER																	
AVE POWER MW		46	49	71	71	76	75	89	94	94	93	89	69	46	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	627.9	16.4	8.2	15.4	51.4	56.3	54.2	66.1	70.3	67.5	68.8	32.2	11.6	8.9	34.3	34.3	32.0
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	1550	169	79	102	199	310	224	129	96	60	42	16	7	9	21	5	82
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	16256	551	270	468	1411	1629	1498	1692	1760	1645	1656	770	276	213	809	791	819
KCFS		18.5	19.4	26.2	23.7	26.5	25.2	27.5	28.6	27.6	26.9	25.9	19.9	13.4	13.1	12.9	14.2
--TOTAL--																	
NAT INFLOW	24601	1435	669	860	2307	3493	6073	3346	1194	1113	1032	452	211	241	651	582	943
DEPLETION	2630	76	35	46	273	705	1329	925	142	-141	-25	-112	-52	-60	-189	-198	-124
CHAN STOR	8	80	13	-14	-22	-20	-32	-9	0	48	32	1	-29	-3	-32	-2	-4
EVAPORATION	1545							95	300	374	323	144	67	76	166		
STORAGE	44542	45429	45807	46139	46741	47880	51094	51719	50712	49995	49105	48756	48647	48656	48490	48477	48721
SYSTEM POWER																	
AVE POWER MW		644	650	700	776	840	890	1094	1129	987	756	733	616	618	768	778	786
PEAK POW MW		2138	2139	2144	2153	2166	2202	2206	2193	2187	2172	2149	2139	2138	2114	2132	2144
ENERGY GWH	7426.5	231.8	109.2	151.1	559.0	624.8	640.8	814.0	839.6	710.6	562.4	263.7	103.4	118.6	571.7	578.5	547.2
DAILY GWH		15.5	15.6	16.8	18.6	20.2	21.4	26.3	27.1	23.7	18.1	17.6	14.8	14.8	18.4	18.7	18.9

28FEB03		2003											2004			
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	6000	242	113	145	525	925	1454	633	263	252	324	167	78	89	295	212	283
DEPLETION	114	15	7	9	73	206	171	173	-25	-91	-61	-28	-13	-15	-102	-117	-88
EVAPORATION	461							28	89	111	96	44	20	23	50		
MOD INFLOW	5425	227	106	136	452	719	1283	432	199	232	289	151	71	81	347	329	371
RELEASE	5766	149	69	89	357	461	565	584	584	399	282	137	97	127	615	646	604
STOR CHANGE	-341	78	36	47	95	258	718	-153	-385	-167	6	15	-27	-46	-268	-317	-233
STORAGE	10922	11000	11037	11083	11178	11436	12154	12001	11616	11450	11456	11471	11444	11398	11130	10814	10581
ELEV FTMSL	2212.1	2212.6	2212.8	2213.1	2213.7	2215.2	2219.3	2218.4	2216.2	2215.2	2215.3	2215.4	2215.2	2214.9	2213.4	2211.5	2210.1
DISCH KCFS	9.0	5.0	5.0	5.0	6.0	7.5	9.5	9.5	9.5	6.7	4.6	4.6	7.0	8.0	10.0	10.5	10.5
POWER																	
AVE POWER MW		62	63	63	75	94	121	122	121	85	58	58	89	101	125	131	130
PEAK POW MW		186	186	187	187	189	195	194	191	190	190	190	190	189	187	185	183
ENERGY GWH	879.1	22.5	10.5	13.5	54.2	70.2	87.1	90.7	90.1	61.2	43.3	20.9	14.9	19.4	93.3	97.1	90.1
--GARRISON--																	
NAT INFLOW	9400	443	207	266	712	1197	2521	1765	496	417	400	164	76	87	222	165	262
DEPLETION	1276	24	11	15	58	133	547	446	93	-61	73	-49	-23	-26	-6	13	27
CHAN STOR	-16	43			-11	-16	-21			29	22	0	-25	-11	-21	-5	
EVAPORATION	539							33	104	130	113	51	24	27	58		
REG INFLOW	13335	611	265	341	1000	1509	2518	1870	883	776	519	298	147	203	764	792	839
RELEASE	13750	476	208	268	1041	1261	1369	1383	1353	916	766	371	236	286	1230	1322	1265
STOR CHANGE	-415	135	57	73	-41	249	1149	487	-470	-140	-247	-73	-89	-83	-465	-530	-426
STORAGE	13150	13285	13341	13414	13373	13622	14771	15258	14788	14648	14401	14328	14239	14157	13691	13161	12735
ELEV FTMSL	1819.5	1820.0	1820.3	1820.6	1820.4	1821.4	1825.8	1827.6	1825.9	1825.3	1824.4	1824.1	1823.8	1823.5	1821.6	1819.5	1817.8
DISCH KCFS	23.5	16.0	15.0	15.0	17.5	20.5	23.0	22.5	22.0	15.4	12.5	12.5	17.0	18.0	20.0	21.5	22.0
POWER																	
AVE POWER MW		178	167	168	195	229	262	261	256	178	144	143	195	205	226	240	242
PEAK POW MW		326	327	328	327	330	343	349	343	342	339	338	337	336	331	325	320
ENERGY GWH	1886.8	64.1	28.1	36.2	140.8	170.5	188.3	194.4	190.2	128.3	107.1	51.6	32.7	39.4	168.3	178.4	168.4
--OAHE--																	
NAT INFLOW	1449	154	72	92	229	130	577	102	24	65	9				-35	-6	36
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	6	36	5	0	-12	-14	-12	2	2	32	14		-23	-5	-10	-8	-2
EVAPORATION	476							30	94	115	98	44	20	23	51		
REG INFLOW	14158	644	275	347	1213	1314	1814	1320	1195	875	698	325	192	256	1123	1293	1274
RELEASE	14584	500	275	365	1237	1398	1262	1719	1694	1349	993	449	230	186	1135	1012	781
STOR CHANGE	-426	144	-1	-18	-24	-84	552	-400	-499	-474	-295	-123	-38	70	-12	282	493
STORAGE	13749	13893	13893	13875	13851	13767	14319	13919	13420	12946	12651	12528	12490	12560	12548	12830	13323
ELEV FTMSL	1589.0	1589.5	1589.5	1589.5	1589.4	1589.0	1591.3	1589.7	1587.6	1585.6	1584.3	1583.7	1583.6	1583.9	1583.8	1585.1	1587.2
DISCH KCFS	16.6	16.8	19.8	20.4	20.8	22.7	21.2	28.0	27.6	22.7	16.1	15.1	16.5	11.7	18.5	16.5	13.6
POWER																	
AVE POWER MW		197	232	239	243	266	249	328	320	261	184	171	187	133	209	187	156
PEAK POW MW		619	619	618	618	616	627	619	609	598	591	588	588	589	589	595	607
ENERGY GWH	2043.8	70.8	39.0	51.7	175.2	197.5	179.4	244.3	238.2	187.8	137.2	61.7	31.5	25.6	155.7	139.4	108.8
--BIG BEND--																	
EVAPORATION	129							8	24	31	27	12	6	7	14		
REG INFLOW	14456	500	275	365	1237	1398	1262	1712	1670	1318	966	436	224	180	1121	1012	781
RELEASE	14456	500	275	365	1237	1398	1262	1712	1670	1318	966	436	224	180	1121	1012	781
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	16.6	16.8	19.8	20.4	20.8	22.7	21.2	27.8	27.2	22.1	15.7	14.7	16.1	11.3	18.2	16.5	13.6
POWER																	
AVE POWER MW		80	93	96	97	106	99	130	127	105	78	74	81	57	90	80	65
PEAK POW MW		517	510	509	509	509	509	509	509	523	538	538	538	538	538	538	529
ENERGY GWH	834.2	28.6	15.6	20.7	70.1	79.2	71.5	96.9	94.6	75.7	58.1	26.6	13.7	11.0	67.0	59.6	45.4
--FORT RANDALL--																	
NAT INFLOW	500	68	32	41	64	51	130	26	49	23	1				5	-5	15
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	144							10	32	39	29	11	5	5	13		
REG INFLOW	14732	566	306	405	1297	1440	1380	1710	1672	1295	937	424	219	174	1110	1004	793
RELEASE	14733	295	171	388	1297	1440	1380	1710	1672	1610	1571	709	237	175	744	732	604
STOR CHANGE	-1	272	136	17	0	0		0	0	-315	-634	-285	-18	0	366	272	189
STORAGE	3124	3396	3532	3549	3549	3549	3549	3549	3549	3234	2600	2315	2297	2297	2663	2935	3124
ELEV FTMSL	1350.0	1353.4	1355.0	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1351.4	1342.6	1337.8	1337.5	1337.5	1343.5	1347.5	1350.0
DISCH KCFS	10.5	9.9	12.3	21.7	21.8	23.4	23.2	27.8	27.2	27.1	25.5	23.8	17.0	11.0	12.1	11.9	10.5
POWER																	
AVE POWER MW		82	104	183	184	197	196	234	229	224	201	177	124	80	91	93	85
PEAK POW MW		349	354	355	355	355	355	355	355	342	306	285	284	284	311	329	338
ENERGY GWH	1457.4	29.5	17.4	39.6	132.5	146.9	140.9	174.0	170.2	161.4	149.4	63.6	20.8	15.4	67.5	69.4	58.9
--GAVINS POINT--																	
NAT INFLOW	1251	91	43	55	124	138	143	81	80	58	105	47	22	25	70	68	101
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	1	-5	-18	0	-3	0	-9	1	0	3	3	13	11	-2	0	3
EVAPORATION	47							3	9	11	10	5	2	2	5		
REG INFLOW	15822	388	209	425	1416	1556	1500	1740	1735	1662	1666	750	267	206	797	799	708
RELEASE	15822	388	209	425	1416	1556	1500	1740	1722	1636	1666	750	267	206	797	799	747
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	15.0	23.8	23.8	25.3	25.2	28.3	28.0	27.5	27.1	25.2	19.2	13.0	13.0	13.0	13.0
POWER																	
AVE POWER MW		46	52	82	82	87	86	96	96	95	95	88	68	46	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	662.7	16.4	8.8	17.6	58.7	64.4	62.1	71.6	71.3	68.7	70.6	31.8	11.4	8.8	34.2	34.3	31.8
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	900	115	54	69	90	174	125	75	56	35	24	13	6	7	13	-3	48
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	16481	497	260	491	1486	1696	1596	1779	1745	1649	1681	757	270	210	799	784	782
KCFS		16.7	18.7	27.5	25.0	27.6	26.8	28.9	28.4	27.7	27.3	25.5	19.5	13.2	13.0	12.8	13.6
--TOTAL--																	
NAT INFLOW	19500	1114	520	668	1744	2615	4950	2682	968	850	863	390	182	208	570	431	745
DEPLETION	2395	68	32	41	205	463	903	850	216	-105	17	-64	-30	-34	-73	-73	-20
CHAN STOR	-11	80	0	-18	-23	-33	-33	-6	4	61	39	3	-36	-4	-33	-12	0
EVAPORATION	1796							112	352	437	374	166	77	88	191		
STORAGE	42985	43614	43842	43961	43991	44414	46833	46767	45426	44357	43187	42720	42550	42491	42111	41819	41802
SYSTEM POWER																	
AVE POWER MW		644	711	831	877	979	1013	1172	1149	949	760	712	743	623	788	777	723
PEAK POW MW		2112	2111	2111	2111	2114	2144	2140	2122	2112	2081	2056	2053	2053	2035	2050	2052
ENERGY GWH	7764.1	231.9	119.5	179.4	631.5	728.7	729.3	872.0	854.5	683.2	565.6	256.2	124.9	119.7	586.1	578.2	503.5
DAILY GWH		15.5	17.1	19.9	21.0	23.5	24.3	28.1	27.6	22.8	18.2	17.1	17.8	15.0	18.9	18.7	17.4

INI-SUM 15MAR 22MAR 31MAR 30APR 31MAY 30JUN 31JUL 31AUG 30SEP 31OCT 15NOV 22NOV 30NOV 31DEC 31JAN 29FEB

	28FEB03	2003										2004				
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB
--FORT PECK--																	
NAT INFLOW	5100	234	109	140	515	783	996	439	253	242	320	159	74	85	271	205	275
DEPLETION	42	15	7	9	73	206	171	100	-52	-122	-87	-25	-11	-13	-88	-83	-58
EVAPORATION	444							27	85	106	93	42	20	22	48		
MOD INFLOW	4614	219	102	131	442	577	825	312	220	258	314	141	66	75	311	288	333
RELEASE	5924	149	69	89	357	492	536	553	553	448	317	153	97	127	615	707	661
STOR CHANGE	-1310	70	33	42	85	85	289	-242	-334	-190	-2	-12	-31	-52	-304	-419	-328
STORAGE	10922	10992	11025	11067	11152	11237	11527	11285	10951	10761	10759	10747	10715	10663	10359	9940	9612
ELEV FTMSL	2212.1	2212.6	2212.8	2213.0	2213.5	2214.0	2215.7	2214.3	2212.3	2211.2	2211.2	2211.1	2210.9	2210.6	2208.7	2206.1	2204.1
DISCH KCFS	9.0	5.0	5.0	5.0	6.0	8.0	9.0	9.0	9.0	7.5	5.1	5.1	7.0	8.0	10.0	11.5	11.5
POWER																	
AVE POWER MW		62	63	63	75	100	113	113	113	93	64	64	87	99	123	139	138
PEAK POW MW		186	186	187	187	188	190	188	186	184	184	184	184	183	181	177	175
ENERGY GWH	887.2	22.5	10.5	13.5	54.1	74.6	81.6	84.4	83.7	67.3	47.5	23.0	14.6	19.0	91.3	103.7	95.9
--GARRISON--																	
NAT INFLOW	7299	270	126	162	700	903	2020	1277	361	277	390	161	75	86	108	160	223
DEPLETION	1115	24	11	15	58	133	547	361	64	-64	66	-53	-25	-28	-12	4	14
CHAN STOR	-27	43			-11	-21	-11			16	25		-20	-11	-21	-16	
EVAPORATION	513							32	99	124	107	48	22	26	55		
REG INFLOW	11567	437	184	237	988	1240	1998	1438	751	681	559	319	155	205	659	847	870
RELEASE	13164	476	208	268	952	1107	1250	1261	1230	912	763	369	236	286	1230	1353	1265
STOR CHANGE	-1597	-39	-24	-31	36	134	748	177	-479	-231	-204	-50	-81	-81	-571	-506	-395
STORAGE	13150	13111	13087	13056	13092	13226	13974	14152	13673	13441	13237	13187	13106	13025	12454	11948	11553
ELEV FTMSL	1819.5	1819.3	1819.2	1819.1	1819.3	1819.8	1822.8	1823.4	1821.6	1820.7	1819.8	1819.6	1819.3	1819.0	1816.6	1814.5	1812.8
DISCH KCFS	23.5	16.0	15.0	15.0	16.0	18.0	21.0	20.5	20.0	15.3	12.4	12.4	17.0	18.0	20.0	22.0	22.0
POWER																	
AVE POWER MW		178	167	166	177	200	235	233	226	172	139	138	189	199	219	237	234
PEAK POW MW		324	324	324	324	326	334	336	331	328	326	325	324	323	316	310	305
ENERGY GWH	1763.6	63.9	28.0	35.9	127.7	148.6	169.4	173.1	168.3	124.0	103.3	49.8	31.7	38.2	162.9	176.1	162.5
--OAHE--																	
NAT INFLOW	1049	197	92	118	183	100	215	82	21	64	5	-5	-2	-3	-48	-12	41
DEPLETION	570	22	10	13	45	62	120	138	90	23	-7	2	1	1	11	15	25
CHAN STOR	5	36	5	0	-5	-10	-15	2	2	24	15		-24	-5	-11	-10	
EVAPORATION	444							29	88	108	91	40	19	21	47		
REG INFLOW	13205	688	295	373	1085	1135	1330	1178	1075	869	699	322	190	255	1113	1315	1281
RELEASE	14843	501	297	375	1262	1421	1277	1737	1711	1385	1047	453	232	189	983	997	975
STOR CHANGE	-1638	186	-2	-2	-177	-286	53	-559	-636	-516	-348	-131	-42	66	131	318	307
STORAGE	13749	13935	13933	13930	13754	13468	13521	12962	12326	11810	11462	11331	11289	11355	11486	11804	12111
ELEV FTMSL	1589.0	1589.7	1589.7	1589.7	1589.0	1587.8	1588.0	1585.6	1582.8	1580.5	1578.8	1578.2	1578.0	1578.3	1578.9	1580.4	1581.8
DISCH KCFS	16.6	16.9	21.4	21.0	21.2	23.1	21.5	28.3	27.8	23.3	17.0	15.2	16.7	11.9	16.0	16.2	16.9
POWER																	
AVE POWER MW		197	251	246	248	269	249	325	315	260	188	167	183	131	176	179	189
PEAK POW MW		620	620	619	616	610	611	598	584	571	562	559	558	560	563	571	579
ENERGY GWH	2039.5	71.1	42.2	53.2	178.6	199.8	179.2	241.7	234.4	187.1	140.1	60.3	30.7	25.1	130.7	133.5	131.6
--BIG BEND--																	
EVAPORATION	129							8	24	31	27	12	6	7	14		
REG INFLOW	14714	501	297	375	1262	1421	1277	1730	1687	1354	1020	441	226	183	969	997	975
RELEASE	14714	501	297	375	1262	1421	1277	1730	1687	1354	1020	441	226	183	969	997	975
STORAGE	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682	1682
ELEV FTMSL	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0	1420.0
DISCH KCFS	16.6	16.9	21.4	21.0	21.2	23.1	21.5	28.1	27.4	22.8	16.6	14.8	16.3	11.5	15.8	16.2	16.9
POWER																	
AVE POWER MW		80	100	98	99	108	100	132	128	108	82	75	82	58	79	80	81
PEAK POW MW		518	510	509	509	509	509	509	509	523	538	538	538	538	538	538	529
ENERGY GWH	850.3	28.7	16.9	21.3	71.5	80.5	72.3	97.9	95.5	77.8	61.3	26.9	13.8	11.2	58.8	59.3	56.6
--FORT RANDALL--																	
NAT INFLOW	300	55	26	33	43	35	120	13	36	-10	-52	-3	-1	-1		-6	12
DEPLETION	80	1	1	1	4	9	12	18	15	7	1	1	0	1	3	3	3
EVAPORATION	143							10	32	39	29	11	5	5	12		
REG INFLOW	14791	555	322	408	1301	1447	1385	1715	1676	1298	938	426	220	176	953	988	984
RELEASE	14792	298	172	391	1301	1447	1385	1715	1676	1613	1572	711	237	176	750	738	610
STOR CHANGE	-1	258	150	17				0	0	-315	-634	-285	-18	0	203	250	374
STORAGE	3124	3382	3532	3549	3549	3549	3549	3549	3549	3234	2600	2315	2297	2297	2500	2750	3124
ELEV FTMSL	1350.0	1353.2	1355.0	1355.2	1355.2	1355.2	1355.2	1355.2	1355.2	1351.4	1342.6	1337.8	1337.5	1337.5	1341.0	1344.8	1350.0
DISCH KCFS	10.5	10.0	12.4	21.9	21.9	23.5	23.3	27.9	27.3	27.1	25.6	23.9	17.1	11.1	12.2	12.0	10.6
POWER																	
AVE POWER MW		83	105	185	185	198	196	235	229	225	201	177	124	81	90	92	85
PEAK POW MW		348	354	355	355	355	355	355	355	342	306	285	284	284	300	317	338
ENERGY GWH	1460.0	29.8	17.6	39.9	132.9	147.7	141.4	174.5	170.6	161.7	149.4	63.7	20.9	15.5	67.2	68.4	58.8
--GAVINS POINT--																	
NAT INFLOW	1200	87	41	52	120	131	138	76	76	55	104	45	21	24	67	65	98
DEPLETION	114	0	0	0	5	19	24	39	10	-5	2	5	2	3	10	1	
CHAN STOR	-1	1	-5	-18	0	-3	0	-9	1	0	3	3	13	11	-2	0	3
EVAPORATION	47							3	9	11	10	5	2	2	5		
REG INFLOW	15829	386	209	425	1416	1556	1500	1740	1735	1662	1666	750	267	206	800	802	710
RELEASE	15829	386	209	425	1416	1556	1500	1740	1722	1636	1666	750	267	206	800	802	749
STOR CHANGE									13	26							-39
STORAGE	358	358	358	358	358	358	358	358	371	397	397	397	397	397	397	397	358
ELEV FTMSL	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.0	1206.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1207.5	1206.0
DISCH KCFS	13.0	13.0	15.0	23.8	23.8	25.3	25.2	28.3	28.0	27.5	27.1	25.2	19.2	13.0	13.0	13.0	13.0
POWER																	
AVE POWER MW		45	52	82	82	87	86	96	96	95	95	88	68	46	46	46	46
PEAK POW MW		114	114	114	114	114	114	114	115	117	117	117	117	117	78	78	76
ENERGY GWH	663.1	16.3	8.8	17.6	58.7	64.4	62.1	71.6	71.3	68.7	70.6	31.8	11.4	8.9	34.4	34.5	32.0
--GAVINS POINT - SIOUX CITY--																	
NAT INFLOW	550	36	17	22	77	144	106	47	22	15	14	10	4	5	10	-5	26
DEPLETION	241	6	3	3	20	34	29	36	33	22	9	5	2	3	11	12	13
REGULATED FLOW AT SIOUX CITY																	
KAF	16138	417	223	443	1473	1666	1577	1751	1711	1629	1671	754	269	209	799	785	762
KCFS		14.0	16.0	24.8	24.8	27.1	26.5	28.5	27.8	27.4	27.2	25.4	19.4	13.1	13.0	12.8	13.3
--TOTAL--																	
NAT INFLOW	15498	880	411	528	1638	2096	3595	1934	769	643	781	367	171	195	408	407	675
DEPLETION	2162	68	32	41	205	463	903	692	160	-139	-16	-65	-30	-35	-65	-48	-3
CHAN STOR	-23	80	0	-18	-15	-34	-25	-6	4	40	43	3	-32	-4	-34	-26	3
EVAPORATION	1720							108	338	419	358	159	73	84	182		
STORAGE	42985	43461	43617	43643	43587	43520	44611	43987	42552	41325	40136	39658	39485	39419	38877	38521	38439
SYSTEM POWER																	
AVE POWER MW		645	737	840	866	962	981	1133	1107	954	769	710	732	614	733	773	772
PEAK POW MW		2111	2109	2108	2106	2102	2114	2102	2079	2066	2034	2008	2005	2005	1976	1992	2001
ENERGY GWH	7663.6	232.3	123.9	181.5	623.6	715.5	706.0	843.3	823.8	686.7	572.4	255.6	123.0	118.0	545.3	575.5	537.4
DAILY GWH		15.5	17.7	20.2	20.8	23.1	23.5	27.2	26.6	22.9	18.5	17.0	17.6	14.7	17.6	18.6	18.5
	INI-SUM	15MAR	22MAR	31MAR	30APR	31MAY	30JUN	31JUL	31AUG	30SEP	31OCT	15NOV	22NOV	30NOV	31DEC	31JAN	29FEB